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Volume 7, number 1 January 1986

Newsline

CANADIANA
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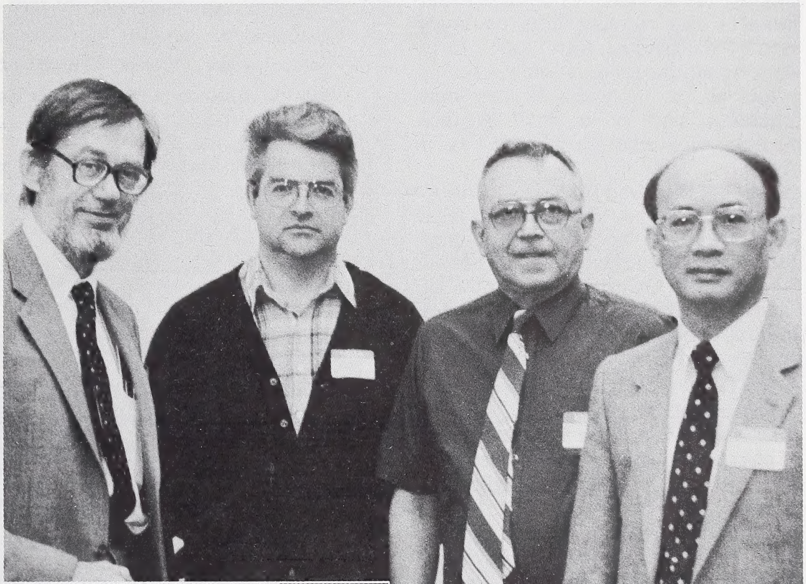
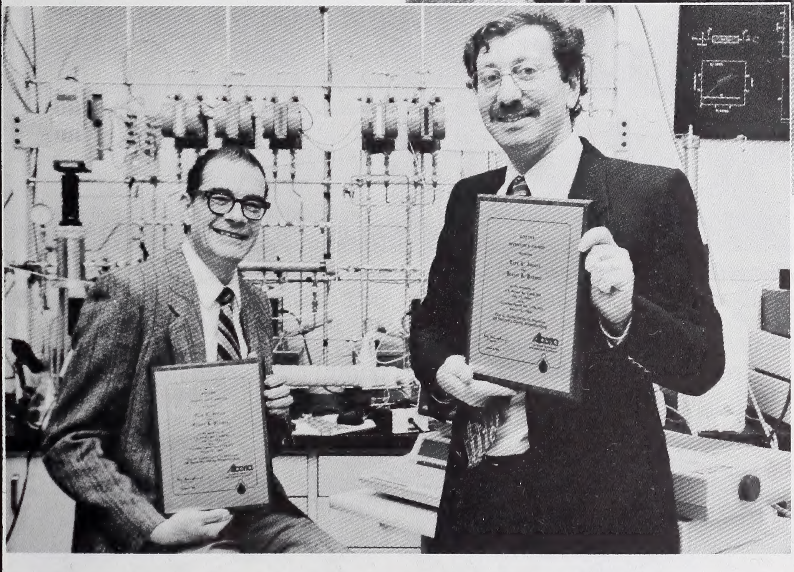
Researchers receive awards for work in gas separation, oil sands technologies

Awards totalling $17,000 for outstanding achievement in research have been given by the Research Council to four employees who developed the membrane technology for separating industrial gases. The research has important economic potential for the province and a new company, International Permeation Inc. of Calgary, has been formed to commercialize the technology. Award recipients are: Dr. Harry Habgood, now retired, who started the research, $4,000; technologists Earl Hadfield and Marty Shurek, $1,500 each for providing major support; and Dr. C. Pan, who led the research project, $10,000. Dr. Robert W. Stewart, President, and Douglas Fenton, President of Alberta and Southern Gas Limited and a Director of I.P.I., made the presentations during the annual staff meeting December 18.





Dr. Eddie Isaacs and Dr. Dan Prowse, Oil Sands Research Department, were honored by the Alberta Oil Sands Research and Technology Authority (AOSTRA) in recognition of the U.S. and Canadian patents issued for the two researchers' work on Use of Surfactants to Improve Oil Recovery During Steam Flooding. They received the AOSTRA inventor's plaque and an accompanying cheque. The Canadian patent was granted last fall and the U.S. patent was issued in 1984.

Newsline is a monthly publication for the employees of the Alberta Research Council

Please send all submissions and direct all questions to
Elizabeth Page, Alberta Research Council, 7th Floor, Terrace Plaza,
4445 Calgary Trail South,
Edmonton, Alberta T6H 5R7

ALBERTA
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Our 65th birthday - what's past is prologue

The Research Council is 65 years old this month. When the Order in Council was passed on January 10, 1921, establishing the Scientific and Industrial Research Council of Alberta, the province itself was a mere youngster of 16.

Our annual reports mirror Alberta's history. From the outset, coal and bitumen, along with geological mapping, were the chief focus for research. But the scientists in the 1920s were examining the efficiency of domestic coal furnaces and running tests on coals used by blacksmiths. Karl Clark's early work on bitumen separation was not as a fuel source (although he saw that potential) but as a road surface material for the province's earth highways.

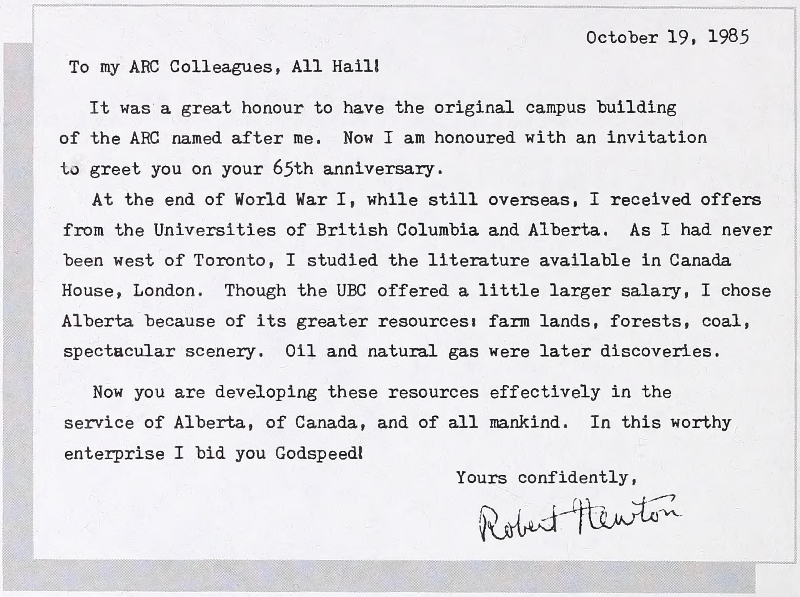
In 1935, the Road Materials Division used some money from a Carnegie Research Grant for field work to conduct a traffic count on Highway 1 from Edmonton to Calgary. The number of passenger vehicles travelling during a 24-hour period was 580, on Sunday the number shot up to 827.

A 1949 Electrical Power and Development Study showed Alberta consumed 600 million kilowatt hours of electrical energy. (In 1984, net electrical generation was 28,426 gigawatt hours).

When Dr. Robert Newton retired from the presidency of the University of Alberta in 1950, but continued as director of the Research Council, it signalled the Research Council's coming of age. With post-war growth a full-time director was now considered essential.

By 1956 the Research Council had its first home with the opening of the Campus building and in 1962 staff got its first digital computer. Highways research, hail studies and microbiology were part of the work and in 1965 Product Research and Development was established, reflecting the increasing industrialization of western Canada. In 1979, the Long Range Plan was implemented, propelling the organization toward the applied research approach of the 1980s.

(Dr. Robert Newton, first full-time director of the Research Council, died in California November 22 at the age of 95. One of his last letters was to the Research Council).



October 19, 1985

To my ARC Colleagues, All Hail!

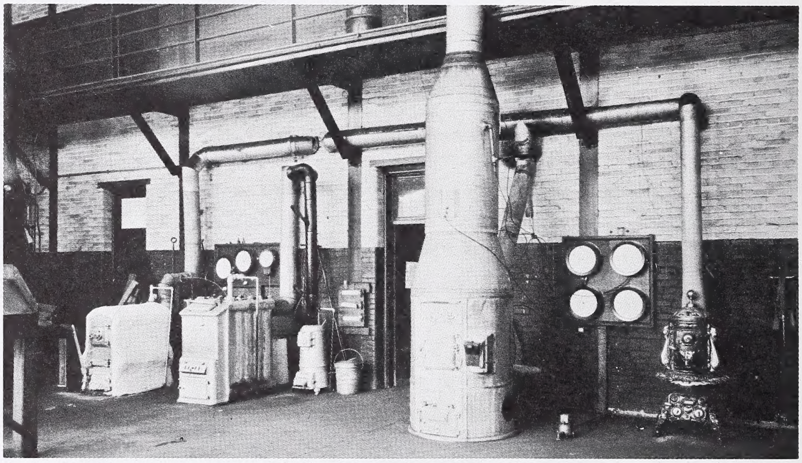
It was a great honour to have the original campus building of the ARC named after me. Now I am honoured with an invitation to greet you on your 65th anniversary.

At the end of World War I, while still overseas, I received offers from the Universities of British Columbia and Alberta. As I had never been west of Toronto, I studied the literature available in Canada House, London. Though the UBC offered a little larger salary, I chose Alberta because of its greater resources: farm lands, forests, coal, spectacular scenery. Oil and natural gas were later discoveries.

Now you are developing these resources effectively in the service of Alberta, of Canada, and of all mankind. In this worthy enterprise I bid you Godspeed!

Yours confidently,

Robert Newton



Domestic coal furnaces in 1923.

Discing bitumen into earth road north of Edmonton.

Exchange with China planned

An agreement signed in China last October between the Alberta Research Council and the Heilongjiang Academy of Sciences (HAS) has opened the way for a scientific exchange which will begin this year.

"This agreement provides details for promoting scientific cooperation between Heilongjiang and Alberta," says Dr. Duncan Currie, Vice-President of Applied Sciences. "We hope both provinces will derive mutual benefits in a number of areas, particularly in the new technologies of biotechnology and computing."

Dr. Currie, along with Dr. Don Gerson, Head of the Biotechnology Department, Dr. Sherman Weaver, Executive Director of the Alberta Environmental Centre, Vegreville, and Ted Szabo, Manager of Forest Products Research, Alberta Energy and Natural Resources, recently visited the Heilongjiang Academy of Sciences to initiate the exchange.

Two Chinese researchers from the HAS Institute of Microbiology will spend a year at the Research Council's Biotechnology Department. One scientist will study genetic engineering and the other will study vaccine purification. The HAS Institute of Automation is expected to send a scientist to the Research Council to study computer process control application in industry.

The Research Council plans to send a biotechnologist to Heilongjiang for several months to study the production of food additives by fermentation and a computer specialist to give three weeks of lectures on computer simulation.

The Heilongjiang Academy and the Environmental Centre, Vegreville, will exchange scientists studying edible fungus and game management. Two Chinese scientists also are expected to come to Vegreville to set up a computerized data base for natural resources information and study.

The calendar of courses and services available through the provincial government is being circulated to staff. The deadline for nominations to be received by the Human Resources Department is February 7.

How to choose the right course

Courses, courses - if you think you should take one, how do you choose the right course for the lowest cost?

"All too often we find ourselves registering for a course as a result of receiving an attractive brochure that promises a quick solution to whatever our needs are - new skills, knowledge or information," says Wolf Gut in the Human Resources Department.

He suggests that the next time you are tempted to send in that registration form because "this course looks just like what I need," consider the following:

- Is a course the most appropriate avenue to pursue or would reading and working together with other staff members be more effective?
- Is this the right course for the purpose?
- Is a similar course available at a lower cost?
- What is the reputation of the instructor and the company offering the course?

Wolf points out that the most extensively marketed courses are usually the most expensive. Whether they provide the ideal solution is another question and he cautions against the "panacea for our problems" approach.

Reading the course material and contacting the company and instructor where possible to discuss how the course will meet our needs can be helpful. He also recommends that you contact him (438-1666) to find out if other employees have attended the course you are considering and their assessment.

The need for strengthening or obtaining skills is usually identified during the performance appraisal process and both managers and employees should ensure courses to be taken are appropriate, and Wolf adds, "We're here to help employees get the right training at the best price available."

SWERP library transferred to university

The SWERP (Solar and Wind Energy Research Program) Information Centre, operated by the Research Council for the past eight years, is winding down its operation and the library collection has been transferred to the University of Alberta.

The University's Science and Technology Library received the extensive collection of 9100 books, journals, government reports and related articles in December. The collection is being integrated into the main collection, ensuring the continued availability of reference material to all sectors requiring information on solar and wind energy.

The SWERP Information Centre was established in 1977 with funding from the Alberta/Canada Energy Resources Research Fund and operated on a contract basis by the Alberta Research Council.

Karen Beliveau, coordinator of the centre, has taken maternity leave, but will be returning to the Industrial Development Department. Terry Maubert has transferred to the Electronic Products Information Centre being operated by IDD, and Nancy Grief has moved to the University of Alberta Science and Technology Library.

Dr. P. McCabe heads section

The Geological Survey Department's Peace River Arch project and the Coal Geology Section have been merged with the Basin Analysis Section under the direction of Dr. Peter McCabe.

"We want to focus our areas of expertise to create a multi-disciplinary, versatile group which will be able to work at the forefront of all aspects of basin analysis," says Dr. Jan Boon, Head of the Geological Survey Department, in making the announcement.

Oil, coal and other resources are distributed in the western sedimentary basin. The principal aim of the new Basin Analysis Section is to understand the factors which control the distribution of economic resources, especially energy resources, within basins and apply this understanding to exploration and development, says Dr. Boon.

Award given for capsule pipeline research

An award recognizing the contribution of the Alberta Research Council to research on hydraulic capsule pipeline transport of solids was made to the Research Council at the Fifth International Symposium on Freight Pipelines held in Philadelphia last fall.

Edmonton consultant Dr. Ron A.S. Brown accepted the award for the Research Council. Dr. Brown, who worked on the capsule pipeline project for 17 years, says the Research Council studies were intended to provide sufficient basis to estimate behaviour of proposed capsule applications for which no experimental results were available.

"The principal contribution of the Research Council to capsule pipelining was undoubtedly the concept and the Research Council studies also made a major contribution to the understanding of capsule behaviour and the development of analytical procedures to describe capsule behaviour," he says.

The 20-year experimental project supported by the Research Council, the federal government and private industry in Canada and the United States, terminated in 1978 when changing industrial priorities decreased industrial and government interest.

Pensions, medical, dental plans

The Human Resources Department wishes to advise staff of the following:

Public Service Pension Plan: Effective January 1, contributions will increase to 3.85 per cent of salary below the Yearly Maximum Pensionable Earnings (projected to be approximately $26,000) and 5.5 per cent of salary in excess of YMPE.

Canada Pension Plan: Effective January 1, Canada Pension Plan deductions will commence again for staff who paid the maximum during 1985.

Major Medical/Hospital and Dental Plans: All 1985 claims for these plans must be submitted to the Human Resources Department prior to March 31, 1986. Any claims submitted after that date will not be eligible for reimbursement.

Dental Plan Coverage: If an employee has family coverage through the Research Council dental plan and the employee's spouse has family coverage under another dental plan, dental claims may be considered under both plans for 100 per cent reimbursement. For correct procedure in processing claims, please contact Florence Vallee, Human Resources Department.

Edmonton's Food Bank got a helping hand from Research Council employees who donated more than $3300 to a drive organized by the Professional Staff Association and AUPE Local 60. From left, Phil Byrne of the Food Bank, accepts the cheque from Mark Lazar representing the PSA, while Bernard Trevor, representing AUPE and Alan Sanger, PSA president, look on.

Campus parking

At the Campus building, the 87th Avenue entrances have been blocked off and a parking attendant's booth installed at the 114 Street entrance. Scramble parking is available for staff with vehicle decals. Visitor parking is restricted to the west side.

Employee changes

We welcome to the Research Council: **John Beddoes**, Manager, Business and Development, **John Popa**, Technical Director, **Ibrahim Saleh**, Project Engineer, **Grant Zachowski**, Project Engineer, all with the Electronics Test Centre; **Philip Heaton**, Technologist, Oil Sands Research; **Alison Bailes**, Research Officer, **Robert Hipkin**, Contract Coordinator, **Lynn Anne Sutherland**, Research Officer, Advanced Technologies; **Yevgenia Briker**, Research Technologist, and **Kim Nesbitt**, Research Technologist, Coal Research; and **Sheila MacDonald**, Clerk Typist, Industrial and Engineering Research.

We wish the following well in new endeavours: **Sylvia Camp** and **Sigrid Wutzke**, Finance and Administration; **Cindy Bencic**, Industrial and Engineering Research; **James Dardis** and **Dale Margel**, Coal Research; **Nancy Grief**, SWERP; **Douglas Malcolm**, Oil Sands Research; and **Allan Prost**, Geological Survey.

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Grant allocation change announced

The Research Council is making an important change in the administration of its provincial government grant which will have significant implications for future budget construction — and ultimately for programs.

Beginning in the 1986/87 fiscal year, research divisions will be assigned portions of the grant deemed appropriate by the Research Committee and the Board. Total funding will then be determined by the grant plus what outside, or contract revenues, a division obtains.

"We wish to shift from the present philosophy of program minus revenue equals grant, to one in which grant plus revenue equals program," says Dr. Robert W. Stewart, Chairman of the Research Committee. "Under the current arrangement, the grant appears to be a subsidy to make up shortfalls in funding. In the proposed system, it would represent a program's predetermined base funding."

Grant + Revenue = Program

Dr. John Douglas, Vice-Chairman of the Research Committee, believes the new regime will give Research Council senior management more control over its research dollars and some financial flexibility.

"Under this proposal, research divisions will have various options. They could parlay their funds upward by entry into joint ventures with private sector companies. They could use the grant money for fundamental supporting research or continue with cost-sharing arrangements with other government departments and agencies," he says. "In practice, they will probably take all of these routes."

The onus will be on divisions to seek those outside revenues and Dr. Douglas agrees that some programs will be determined by "scientific salesmanship." It could also mean that the ratio of contract to grant dollars will shift from what has been the overall financial balance for the Research Council in recent years. Last year's financial statement showed government grant funding at 51 per cent, contracts at 49 per cent.

Some programs, especially in the early phase, may have difficulty in attracting outside revenue, but as they develop they should be able to acquire outside funding. No program should be developed in isolation from the needs of the private sector or the objectives of the provincial government.

"If a program cannot attract any external client support, we have to determine why its priority appears to be so much higher within the Research Council than elsewhere. Perhaps it should be discontinued," says Dr. Douglas.

The proposal was adopted by the Board of Directors. Initially, grant allocations will be based on actual grant expenditures anticipated for 1985/86. Thus there should be no dramatic disruptions in the transition from one regime to the other.

The Board approved the following proposed re-allocations of grant money and activities for the next fiscal year:

- An increase in oil sands grant allocation by $200,000
- Decrease in the coal research grant allocation by $100,000, to be re-allocated within the Energy Resources Division
- Decrease in the Natural Resources Division grant allocation by $200,000
- Termination of Program Development office in the Industrial and Engineering Research Division, with the funds going to the Industrial Development Department
- Transfer of the energy research component of the Chemistry Department to the Energy Resources Division, and those funds to Biotechnology
- The grant allocation to Applied Sciences and Industrial and Engineering Research Divisions to remain unchanged.

The old system could be said to reward failure, says Dr. Douglas. "We want to reward success and we think the new strategy will meet this aim."

Mill Woods committee named

All space occupancy, allocations, change requests and issues relating to the new building at Mill Woods will be dealt with by a committee set up by Dr. Robert Green, Vice-President of Operations.

Dr. Green will chair the committee which will include representatives from each division with laboratories and/or offices in the new building, Dr. Duncan Currie, Vice-President, Applied Sciences Division and Dr. Ken Babcock, Vice-President, Natural Resources Division, will represent their respective divisions. A Finance and Administration Division member has yet to be named.

Also on the committee are Colin Ford, Manager, Facilities Management, and Eugene Parranto, Safety Coordinator.

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Elizabeth Page, Alberta Research
Council, 7th Floor, Terrace Plaza,
4445 Calgary Trail South,
Edmonton, Alberta T6H 5R7

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Four appointments made to board

Four new members have been appointed to the Research Council's Board of Directors. They are: Clay R. Iverson, Medicine Hat, recently retired Chief of the Defence Research Establishment, Suffield, Alberta; John R. McDougall, Edmonton, Vice-President of McDougall and Secord Ltd. and President of DALCOR Innoventures Ltd., Dr. George B. Miller, Calgary, President and Director for NOVA/Husky Research Corporation Ltd.; and Dr. Irene Teitz, Calgary, Clinical Laboratory Scientist at Calgary General Hospital and the first woman appointed to the Board.

They succeed four directors who have completed their terms of appointment on the Board of Directors: Jack H. Nodwell, Calgary, President of Canadian Foremost Ltd.; and Edmonton businessman Jack E. Pike, retired; Aage F. Tottrup, consulting engineer; and Dr. Don Stanley, Chairman and Chief Executive Officer of Stanley Associates Engineering Ltd.

Mr. Iverson held numerous senior positions in his 30 years service with the Department of National Defence and the Defence Research Board including Deputy Director of the Systems Research Division of SHAPE Technical Centre, the Hague, Netherlands, and Chief/Defence Research Establishment, Ottawa. He has represented the Department of National Defence and Canada on a number of national and international scientific committees.

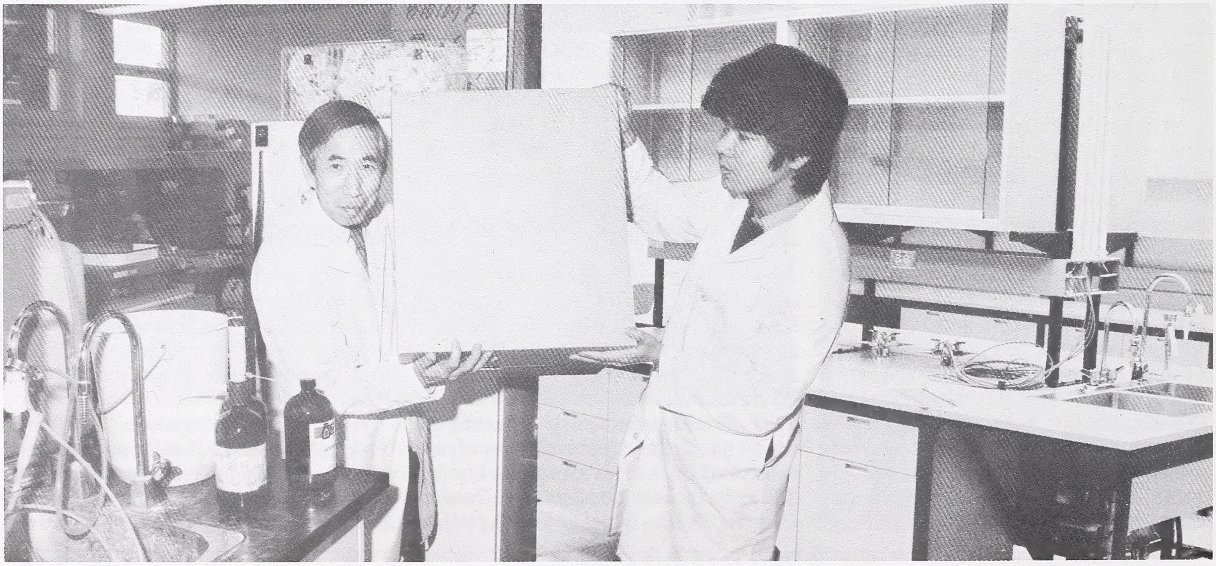
Born in Bawlf, Alberta, Mr. Iverson received a B.Sc. in engineering physics from Queen's University in 1952. He was a partner in an electrical contracting business in Wainwright, Alberta, and from 1952 to 1955 worked as an electronics engineer with Canadian Westinghouse Co. Ltd.

A fourth generation Edmontonian, John McDougall received his B.Sc. in civil engineering from the University of Alberta in 1967 and spent nine years with Imperial Oil Ltd. in business development, production and field services. In 1975 he founded the consulting firm of DALCOR Innoventures where he is involved in policy and planning, resource development, manpower and economic strategy and the development of computer software packages. His work with McDougall and Secord involves managing company operations including property management, land and minerals and investments.

Mr. McDougall is an Honourary Life Member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta, chairman of the Canadian Engineering Manpower Council and a director of the Canadian Council of Professional Engineers. In 1983 he served as a member of the Governor General's Canadian Study Conference.

Dr. George Miller, a native of Detroit, Michigan, received his B.Sc. and M.Sc. from Wayne State University, Detroit, his Ph.D. in physical chemistry from Purdue University, Indiana in 1957, and has broad experience in research and development in the petroleum industry. He has worked as a manager for Husky Oil, Occidental Petroleum, Marathon Oil and Hewlett-Packard Corporation, and in research and development for the Atomic Energy Commission and the U.S. Department of Defense. He is also a former consultant to the Medical Faculty of the University of Colorado School of Medicine, Department of Physiology. He has held his present position as President and Director of Research at NOVA/Husky Research Corporation since 1981.

Dr. Irene Teitz, born in Bad Rappenau, West Germany, received her B.Sc., M.Sc. and Ph.D. (Microbiology, 1955) from the University of Bonn, West Germany. She worked as a bacteriologist at breweries, first in Stuttgart and after moving to Canada, in Calgary. Since 1971 she has been a clinical laboratory scientist at the Calgary General Hospital and spent one year conducting basic research in genetics and enzymology at Baylor College of Medicine, Houston, Texas.



Seeing things - photographer Leslie Lorinczi synthesized photos of last month's moving day for the Biotechnology Department staff. Dr. Toshi Kaneda, at left in his old laboratory in the Campus building basement, "hands" one of the many packing boxes to Dr. Hirosuke Oku in the spanking new laboratory in Mill Woods.

Award winning scientist discusses coal research work in Japan

The complexity of the chemistry of coal conversion processes to liquid fuels and the high capital costs of handling erosive and abrasive materials are the most significant factors in process economics. Simplifying the chemistry, thereby decreasing the volume of abrasive materials for further processing is the present goal of conversion research and technology development.

Dr. Sugit Chakrabartty, senior research officer in the Coal Research Department, had a unique opportunity to discuss these problems and his work in coal chemistry with Japanese researchers when he spent three months in Japan last year. Dr. Chakrabartty was the 1985-86 recipient of the Japanese government research award for foreign specialists.

Japan has a number of coal liquefaction pilot plants and design for a commerical plant is under way. Dr. Chakrabartty visited coal-liquefaction and coal-derived liquid upgrading facilities in addition to the research he carried out at the Government Industrial Development Laboratory (GIDLH) in Sapporo, Hokkaido.

"I was able to initiate a small project on the thermal chemistry of coal liquefaction and start some apprentices on the work," he said. "GIDLH has an extremely modern laboratory and I was able to get some insight in how the Japanese manage research projects."

The applications of modern management are identical to western concepts, he observed, but the Japanese are looking at long-term goals with a much broader view of their responsibilities -"they see their work as a contribution to their nation, not just a job for the company."

Dr. Chakrabartty gave a formal lecture on the thermal chemistry of coal liquefaction at the University of Hokkaido and presentations on the work of the Research Council's Coal Research Department at the invitation of the University Coal Research Group, and to university students by special request of Professor Sanada.

He also delivered formal presentations at GIDLH at the invitation of the Japan Chemical Society, and at Mitsue Shipbuilding and Engineering Company, Ichihara, and made informal presentations on visits to Nippon Kokan Research Laboratory, Kawasaki; Sumitomo Metal Industries, Kashima; the National Research Institute of Pollution and Resources, Tsukuba; Kansai Coke and Chemical Company, Amagasaki City.

He attended the annual meeting of the Hokkaido Coal Research Society and met with delegates from the People's Republic of China visiting GIDLH.

As a follow-up to his stay in Japan, Dr. Chakrabartty plans to publish two papers - one on his research project and the other on his lecture topic.

Industrial Technologies to support manufacturing sector

An Industrial Technologies Department has been created in the Applied Sciences Division with the primary objective of providing research support to Alberta's manufacturing sector.

Peter Williams has been named Acting Head of the new department, formed from the merger of the Chemistry Department and the Materials and Testing Department.

In making the announcement, Dr. Duncan Currie, Division Vice-President, said the department will have two sections: Industrial Processes to be managed in the short term by Dr. Mike Kessick; and Industrial Products and Materials under Mr. Williams until a section head is recruited.

Al Roehl assumes a staff position as Administration and Contracts Officer. Barbara Turner is department secretary.

Until consolidation of the department in Mill Woods, the address is the Campus building, phone 439-5916.

In addition to these changes, Dr. Currie has announced the formation of a Data Acquisition Group reporting directly to the vice-president. Charles Richmond has been named manager of the Data Acquisition Group, which will include the instrument repair staff.

Raj Rajan

Raj Rajan heads PSA

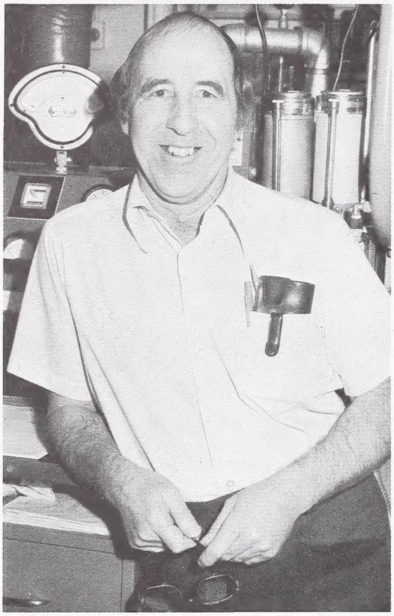
V.S.V. (Raj) Rajan, Oil Sands Research Department, is the new president of the Professional Staff Association. Other members elected to the 1986 PSA Executive Committee are:

Alan Sanger (Chemistry), past president; Kathy Potter (Biotechnology), vice-president; Bryan Fuhr (Oil Sands Research), executive secretary; Rod Ridley (Oil Sands Research), recording secretary; Birbal Singh (Oil Sands Research), treasurer.

Divisional representatives: Mark Lazar (Biotechnology) - Applied Sciences; Tim Southern (Coal Research) and Surindar Singh (Oil Sands Research) - Energy Resources; Eugene Parranto (Safety) - Finance and Administration; Chuck Harrison (Industrial Development) - Industrial and Engineering Research; Lawrence Andriashek (Terrain Sciences) and Joe McGillivray (Geological Survey) - Natural Resources; John de Haan (Computing) - Operations and Secretariat.

Committee chairmen elected are: Jennifer Fullen (Library) - membership; Myron Oleskiw (Atmospheric Sciences) - professional development; and Milan Selucky (Coal Research) - remuneration review.

Ralph Rose is retiring a happy man



Ralph Rose

The fuel testing machinery in the Research Council's Gasoline and Oil Testing Laboratory have been in the care of one man for so long they are known as "Ralph's engines."

But Ralph Rose is retiring after more than a quarter of a century devoted to running and maintaining those engines in the Campus building. Half the samples handled by the testing laboratory pass through his engine room to be tested for octane ratings of gasoline and cetane ratings of diesel fuel.

In addition to those coming into the Research Council from government departments, individuals, refineries and the Department of National Defence, samples go out. The lab has a continuous cooperative exchange with the Rocky Mountain Regional Group and the Canadian government Specifications Board, distributing samples across Canada and as far south as New Mexico, for verification of standards, accuracy and laboratory procedures.

Ralph joined the Research Council as a lab assistant in September, 1958, and a year later assumed his present position.

"I've always been content in this position and have had very little interference in running my machines," he says. He served for two years as secretary and two years as chairman of the American Society for Testing and Materials Rocky Mountain Regional Group, and is founding chairman of the Canadian Cetane Engine Operators Group.

Now he's ready for a change of scene and new challenges. He and his wife have mapped out a year of travel - San Diego first, then Australia and New Zealand and a trip to their native Britain. And they will be moving to the Okanagan where Ralph says he "might dabble in real estate."

Staff notes from all over

Staff members who have 1984 earned vacation credits still outstanding should make arrangements with their managers to retire these credits as quickly as possible.

★ ★ ★

The revised Policy and Operations Manual has been distributed to all departments and Research Council libraries. The revised format is in keeping with the Research Council's visual identity program and the contents have been organized to make it easier to follow. The Human Resources section is ordered so as to trace the growth of a "typical" career more logically.

★ ★ ★

Dr. Ernest Chang, Technical Director, Advanced Technologies Department, has been appointed an adjunct professor in the Computer Sciences Department, University of Calgary.

★ ★ ★

Occupational Health Nurse Stephanie Wilson is offering to share the New Canadian High Energy Diet with those who succumbed to the holiday season. Anyone interested in this program should call the health unit (438-1666).

★ ★ ★

Dr. Emlyn Koster, Geological Survey Department, attended an advisory meeting on research policy for the Tyrrell Museum of Palaeontology, Drumheller, held at the new museum in December. Dr. Koster was also a guest at the launching November 4 of the Canada-China Dinosaur Project, an initiative of The Ex Terra Foundation, a private, non-profit organization based in Edmonton.

Employee changes

We welcome to the Research Council: **Michael Danysh**, Research Technologist and **Helen Helm**, Research Technologist, Oil Sands Research; **Roy Masrani**, Assistant Research Officer, Advanced Technologies; **Margaret Pigot**, Research Technologist, Terrain Sciences; **Lucille Sanders**, Clerk Typist, Atmospheric Sciences.

We wish the following well in new endeavours: **Jean Booth**, President's Office; **Timothy Cake** and **Philip Heaton**, Oil Sands Research; **Richard Hart**, **Heidi Leury** and **Terry Maubert**, Industrial Development; **Judy Renschler**, Materiel Management; **Janet Rogiani** and **Gladys Stott**, Materials and Testing.

Robert Hipkin has joined the Advanced Technologies team as a Joint Ventures and Contracts Coordinator, to act on a departmental basis. Newsline inadvertently omitted a portion of Mr. Hipkin's title in the January Employee Changes.

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Volume 7, number 3

Newsline

March 1986

Smoking policy effective May 1

One of today's major social issues concerns the growing controversy over smoking in the workplace. Two factors - acknowledgement of everyone's right to clean air and the overwhelming scientific evidence of the harmful effects from direct and indirect tobacco smoke - have forced governments and private industry to examine ways of dealing with the problem.

Armed with the results of a questionnaire circulated by the Professional Staff Association and AUPE Local 60 to Research Council employees, the Operations Committee has approved a new policy on smoking in the workplace which will become effective May 1 in all Research Council premises.

The general rule under the policy stipulates that non-designated areas and most of the workplace will be smoke-free. Locations in which smoking is allowed will constitute exceptions to this general rule.

"We cannot disregard the feelings of smokers," says Bill Cherpeta, Vice-President of Finance and Administration. "The policy is our first attempt in this regard and I think it is fair to all sides if it proves successful, it could be expanded."

The purpose of the policy is to ensure the comfort of all employees and not to regulate the personal habits of individuals, says Occupational Health Nurse Stephanie Wilson, who developed the policy. "Implementation will depend on the goodwill, cooperation and flexibility of both smokers and non-smokers."

Of the 251 employees replying to the questionnaires, more than 80 per cent registered concern based on health reasons and favoured designated smoking/non-smoking areas or a total ban. Non-smokers (53%) and ex-smokers (26%), combined far outweigh the number of smokers (21%) among questionnaire respondents.

Two-thirds of the respondents said the Research Council should offer programs to employees to help them stop smoking and Stephanie says the Occupational Health Unit will provide a program on request. Information on external smoking cessation programs also is available from the health unit.

Mandatory smoke-free areas are: any rooms where flammable materials are used, handled or stored; where data processing or other sensitive equipment is housed; elevators, stairwells, washrooms and any area not designated a smoking area.

Other policy details:

- Lunchrooms - normally 30% of the

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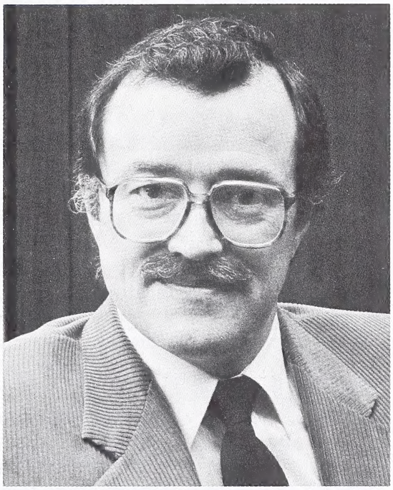
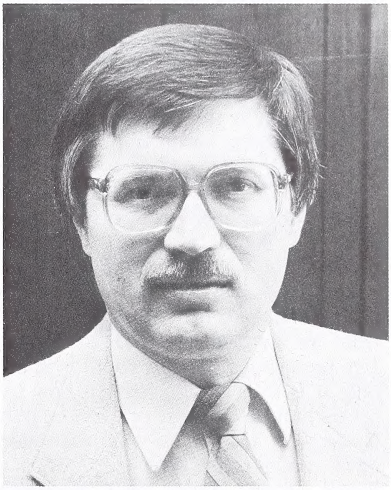


Dr. George Sedgwick



Dr. Charles Reichert

Appointments announced

Dr. George Sedgwick and Dr. Charles Reichert, Oil Sands Research Department, have been appointed Senior Research Officers.

Dr. Sedgwick is a recognized expert in radiation techniques related to multiphase composition measurement and his most recent contributions include the adaptation of computer tomography and xeroradiography technologies to oil sands research. He received his Ph.D. in electrical engineering from the University of Alberta in 1974 and joined the Research Council in 1980, and is manager of the Fluid Flow in Porous Media project.

Dr. Reichert received his Ph.D. in mass spectroscopy from the University of Manitoba in 1969 and came to the Research Council in 1976 from the Defence Research Establishment in Suffield. As Head of the Oil Sands Analytical Services Group, he has made outstanding contributions in both the management of the Oil Sands Research Department's analytical services laboratory and in analytical method development research.

Newsline is a monthly publication
for the employees of the Alberta
Research Council

Please send all submissions
and direct all questions to
Elizabeth Page, Alberta Research
Council, 7th Floor, Terrace Plaza,
4445 Calgary Trail South,
Edmonton, Alberta T6H 5R7

ALBERTA
RESEARCH
COUNCIL

AN INTERVIEW WITH THE PRESIDENT

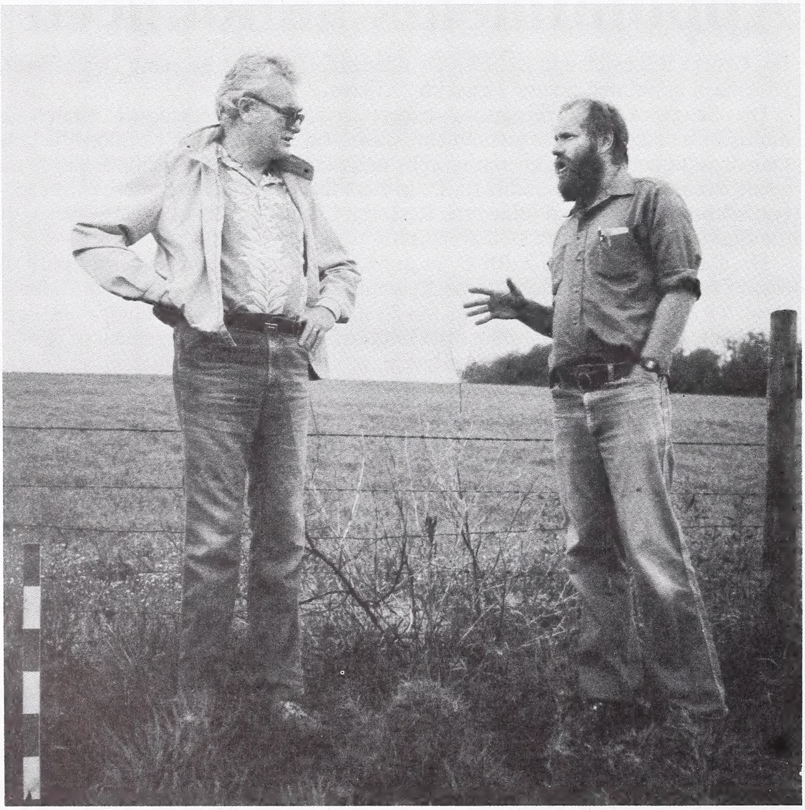
We should have no lesser ambition than t

As we approach a new fiscal year, Newsline took the opportunity to discuss a number of topics with our president, Dr. Robert W. Stewart. We present here the text of that interview.

On the changing direction of the Research Council:
We're far more in a team research mode, much less an individual small group research mode than the Research Council was a few years ago. That's really had quite an impact on the way most people are working. It makes it a lot easier to turn your attention to some of the applied problems you have to face. We're a more structured organization than we used to be, which makes it easier from a management point of view to focus the direction of what we are doing. One of the things I've been rather pleased about is that I hear it is said far more often now by others that the purpose of the Research Council is to aid in the economic development of the province. This, as a theme, seems pretty well accepted around the Research Council.

It provides a general guiding direction. If people have a choice of which way to go, they can think through the direction which is likely to have the most positive impact on the economy.

On the Research Council's impact on the economy:
We are having some impact. The Electronics Test Centre is being very favourably received by industry in that area. They have a fairly rapidly filling order book which indicates it is going to be very useful in the province. The active interest the Calgary research community and private advanced technologies sector have taken in our presence in Calgary and joint research ventures intiative is really quite important. I would anticipate some really positive things will develop from that — some have already in the smaller companies wer have helpted. The start-up of work in forest products is of considerable consequence with some impact on that particular area of the economy; in heavy oils and bitumen we do notice more companies coming to us. The other things are more a continuation of the work we have encouraged.



In the field: Dr. Stewart with soil scientist Bob Howitt

On other areas of industry Research Council could assist:
Any direction we move in will be after a lot of discussion and lot more people will be involved. In the discussion that led to the initiative of biotechnology and the Advanced Technologies Department, there was a decision to get out of some areas, or at least to consider them less important. I tend to believe we're going to have to re-visit that. I don't wish to imply that I'm critical of the decision made before. I have no reason to believe it wasn't appropriate at the time, just that we should not be bound by it now. It seems quite likely to me that forest products are far more important and working in natural gas and other small molecule areas is something we are going to have to take much more seriously than was contemplated previously. There was a feeling these were things other people were going to look after or they were mature enough not to worry about them. I think events have proved that not to be the case and I can see us called upon or deciding ourselves to do more in those areas.

Right now we are largely a test centre in forest products although we have been developing some products and there have been a few initiatives like the Tigney one, in which we've taken some part, but haven't been deeply involved. The resource is too big and too unexploited to be ignored and I think we are going to have to do something in that area, perhaps more than we are. None of this will happen without close collaboration with Energy and Natural Resources people.

In small molecules and natural gas, there are some interesting things being done by Alan Sanger and his people and I think there is a realization in the Research Council that this area has some promise for making better use of

be the best in the world — *Dr. Robert W. Ste*

small hydrocarbons than simply burning them. It's an area that, if we could be clever, it could make a big difference to the economy of the province.

On our scientists being entrepreneurial:
We in the Research Council have to be more entrepreneurial. It doesn't mean every scientist has to act in this mode and they may find it more satisfactory to allow the other people in their area to become more entrepreneurial and simply work in things that come up because of the entrepreneurial efforts of others. Certainly all our groups are going to have to be entrepreneurial if they expect to expand or advance in the range of things that they are doing, because that's the only way I think they are going to get additional funding. So they are going to have to think in terms of what is it that we are doing — or what we could do which would be so useful to somebody that they'd be willing to pay for it. The somebody can cover quite a wide range from the private sector, government, industries and, from time to time, people from outside the province and outside the country.

> *We must concentrate on this business of what we can do to help the economy. We've got to be imaginative ... diligent and thorough.*

The team approach becomes more important and it really has to be a team. We have to have a very good relationship with the people who are actually doing the work.

Sometimes they will be the same people, but when they are not, they have to understand what the capabilities of the Research Council are so they don't try to sell things we don't have. And the people doing the work must have a clear understanding of what kinds of things are being proferred from the Research Council's capability.

We want always to be in a position that when we say we can do something, we can indeed do that. It will require quite a lot of liaison between the people who are doing the saying and the people who are doing the doing.

On scientific ambition and setting standards:
Anybody with the kind of ambition to be a scientist way out on the leading, cutting edge of certain areas of his discipline won't come and work for us because we aren't doing that kind of thing. We're doing things, from the view point of those who are out on the cutting edge, that are more filling in behind. It's still moving the frontiers of science if you like, but it's not way out in the advanced probes of science. I feel very strongly that, although we acknowledge the range of things we are doing does not include the forefront cutting edge, we shouldn't have anything but absolutely the highest standards in the things we are doing. There is no reason why, for example, the oil sands research area shouldn't be the best in the world and maybe we are. That's a perfectly reasonable ambition, but nobody out there in the Oil Sands Research Department thinks they're going to get a Nobel prize because those are not the kinds of things Nobel prizes are given for. Similiarly, the Electronics Test Centre is a world class, although not large, test facility, and we should have no lesser ambition than to be the best in the world at the things we do there. That's the sort of attitude we want.

A case in point is plate tectonics development — the cutting edge of that was done in the universities by academic scientists. What our people have been doing is using the concepts for other things involved with eventually economic geology. It's not a lesser activity, it's simply a less spectacular activity and it will get less public attention. There is no reason at all why our scientists shouldn't be using the most current ideas in the most intelligent way possible. When you compare our geological survey with another geological survey, ours should be the best in the world.

Again, I don't think we're going to make any big headlines about new things we produce in biotechnology, but I don't see any reason why the fermentation plant we built shouldn't be as good as any in the world. I don't see why it shouldn't try to be the best. I won't get upset if it doesn't succeed in being the best, but I would get upset if it didn't try to be the best.

On the new building at Mill Woods:
It's a magnificent facility that has been given to us and by the people of Alberta through the government of Alberta and I think we have to remember that. I think people working in that building and indeed, in other areas in which the Research Council operates, should from time to time look out the window at all those little houses and realize it's those people out there who built that building for them and it's those people who are paying their salaries. We have to think of what we are doing to give a full value return to those people. I think if we have that attitude we will serve the province a good deal better than if we somehow think all of this appeared by some magic out of an unknown source of funds.

> *We're one of the major tools the province has put in place to solve its longer term problems — exploiting its resources and diversifying the economy.*

To the extent that we can, we should regard it as something people should be allowed to see. We should be proud of it, the province should be proud of it, and it should not be some kind of mysterious thing where nobody has any idea what's going on inside.

On what the facility means to the province:
It will show to the world the province is serious about science and serious about technology. Its very presence, the size

vart

of it, will have some effect on young people. They will realize this is a kind of activity that exists in our society they can aspire to being a part of. It might change their attitude in the things for which they prepare themselves.

On the changes in retirement legislation:
There is a lot of debate about when scientists should retire. I think that there is a lot of evidence that mathematicians don't do very well when they get older. Sometimes it is expressed that there are two attributes to people we value. One of them is brilliance and the other is wisdom and there is a tendency for brilliance to decrease with age and for wisdom to increase. So you shift what you are doing as you get older into areas where the wisdom is more important and the brilliance is less important. There are still lots of things you can do in the scientific area that require a substantial amount of wisdom, so I don't necessarily feel that people have to quit doing science as they get older.

The number of people close to 65 in the Research Council is very small indeed. The big advantage we have from that situation is that when we have to face a proportionately aging population as some organizations now must, the rules of the game will be well established. We will know what to do in 15 or 20 years and I don't think the Research Council has to worry about it.

The rules of the game as I have tried to establish them around here are that by and large, you replace the people who leave with people who are more junior. Being more junior, they are more likely to be younger.

The probability is that we will not employ a great many people between now and the year 2000 who will retire before the year 2000. We may employ a few, in fact I would be in favor of employing a few because it would give us a few more senior people and a few "wise old men" in the Research Council would probably be a good thing because we don't have all that many.

A new system for merit and reward:
I've made high ratings more scarce and hope that to some degree they'll be more sought after because they are scarce. We've made them more valuable by attaching more dollars to them. I don't think one should operate on a system that has only one set of rewards. The main set of rewards we want on the whole is not the high ratings and high bonuses available, but simply the regard of one's peers. Scientists will work for that more than any other single thing. Being well regarded by one's peers is a very strong motivation.

Money is not to be ignored, and the general world outside tends to consider how much you make as some measure of what your success is, although it's not a clear one to one ratio at all. I think what we have been doing is to see whether by making these rewards higher, harder to get, they will, at least to some people, provide a motivation. We'll see how it works. Imposing something like that doesn't irretrievably damage the system. If it proves, and I don't think it will, but if it proves adverse, rather than positive, it can be reversed rather easily. The fact it is used a great deal in the private sector leads me to believe there's a good chance it will work.

One should have a kind of collective corporate pride.

Dr. Robert Stewart

The other thing we've done is made it less probable that when you do well one year and are rewarded for that, you will continue to be rewarded for the rest of your life on one year's high performance. I've always thought it was terribly unfair to give somebody a continuing reward for a temporary performance. Under this system we have now, to a considerably greater degree, a higher reward will depend on high performance. I think that's fairer.

On the future of the Research Council:
Some newish things we have put in place I expect to be a lot more solid than they are now — advanced technologies and biotechnology, the Electronics Test Centre. I think we will have a few other new things in place. I won't try to identify them. There are various irons in the fire and which one of those we will be able to do something with is hard to tell. I think we must concentrate on this business of what we can do to help the economy. We've got to be imaginative about it and we've got to be diligent and thorough. We're one of the major tools the province has put in place to solve its longer term problems — exploiting its resources and diversifying the economy. There is a fairly widespread and increasing sense of purpose within the Research Council.

On corporate pride:
I just would like to see, the word I would use is compassion, a greater sense of compassion among staff in dealing with each other.

It's important that people in the Research Council learn to like themselves better, not only themselves, but the other people they work with. It's a pretty good place, there is no reason why they shouldn't have a sense of pride and satisfaction.

One of the things I think is really rather important is that people in the Research Council should feel pride in the work that other people in the Council are doing. Not just what they themselves are doing, but what other groups are doing — one should have a kind of collective corporate pride.

How to get the most from your training

Using care in the selection of training programs is only the beginning of several steps towards making the training experience a success.

"By success I mean that you use the experience itself for learning and personal growth and that you apply your learning back on the job," says Wolf Gut, Human Resources Department.

If you have taken some of the provincial government's courses you know that it is important to set some goals or objectives related to what you expect to get out of a course.

If a course is not as relevant as you had hoped you can still get a lot out of it by focusing on what you could learn from others at the course and by actively taking part.

The most important thing is to make a commitment to apply what you learn back on the job. Wolf provides these tips to help you make this happen:

1. Make an action plan and keep it in view.
2. Make some verbal or written commitment to colleagues about how you will apply what you learned.
3. Separate or prepare a single sheet of paper from the course material that summarizes or represents the key learning you need to apply and keep it in your desk for immediate reference.
4. Ask your supervisor or manager to give you feedback on how you are increasing your effectiveness as a result of your training.
5. Monitor your own program as it relates to your action plans.

By practising in the workplace the skills you have learned in the classroom, you will achieve the objectives of career training and development and organizational effectiveness.

Smoking policy *continued*

total area will be designated for smoking. In lunchrooms too small to accommodate a smoke-free area, the manager will designate the lunchroom as either smoking or non-smoking.

- Meeting rooms - normally smoke-free areas. Chairpersons will ensure that breaks in the meeting are provided for smokers to go to designated smoking areas. Smoking may be allowed in meetings with unanimous consent and with consideration for the next group using the facility.
- Single-occupancy enclosed offices - may be designated according to the wishes of the occupant. It is the responsibility of the occupant who allows smoking in the office to ensure that it does not drift to non-smoking areas.
- Multiple-occupancy workspaces - normally designated as smoke-free. However, if there is consensus among the occupants to create smoking and non-smoking areas, this should be accommodated providing it does not interfere with operations. In locating the smoking area, consideration should be given to the location of ventilation exhaust openings. If consultation is not successful, the manager could designate smoke-free and smoking areas on his/her own initiative.
- Reception areas - where possible will be divided in smoking and non-smoking areas. The location of ventilation exhaust openings should be considered in locating the smoking areas. If this cannot be accommodated, then to prevent non-smokers from being exposed, these areas could be designated smoke-free.
- Engineering space and certain laboratories where it does not pose a safety risk can be designated according to the unanimous consent of the users. If consultation is not successful, the manager could designate areas on his/her own initiative.

Mill Woods: getting a move on

The first major moves to Mill Woods are underway.

Staff at Parsons Property moved to their new quarters in late February. The schedule calls for Library Services, Financial Services and Materiel Management staff in Terrace Plaza, and most of the staff in the Robert Newton (Campus) building, to move during the first week of March.

The Computing Department and Gasoline and Oil Testing Laboratory will vacate the Campus building at a later date. The next major groups from Terrace Plaza are slated to move in May.

Facilities Management is arranging the physical moves, but individual equipment operators are responsible for calling in specialists for dismantling their equipment.

Research Council employees and their families will be invited to a special tour of our new headquarters and laboratory building early this spring. Details to follow in the April Newsline.

Dr. Robert Green, Vice-President of Operations, cautions that non-standard electrical hookup needs may not be met completely prior to these early moves and some cannot be done until users make a final decision on where they want their equipment. Dr. Green requests diagrams showing specific locations for equipment and if you need plans, Lanna Shew (Terrace Plaza, 438-1666, ext. 319) can supply them.

Basic furnishings such as desks and work surfaces are in the Mill Woods offices so no desks are to be moved from the Campus building. Dr. Green advises that staff may take file cabinets and bookshelf units but that these will be replaced eventually by new furniture.

Staff who will occupy enclosed offices may take personal plants - but only healthy plants are welcome and are the owner's responsibility. Plants for common areas and open offices will be supplied and maintained by Public Works, Supply and Services.

A 60-million-year-old footprint

Historic footnote

A most valuable and unique specimen found during the year is a slab of Paskapoo sandstone containing the fossilized footprints of an early Tertiary mammal. This valuable specimen was discovered by Dr. R.L. Rutherford and his assistant, L.S. Russell, on the south bank of Red Deer river about a mile west of the town of Red Deer. This specimen has been prepared and suitably mounted in a frame for exhibit purposes. A short description of these mammal tracks has been prepared by the dicoverers and published in the American Journal of Science. This is the first specimen of early Tertiary mammal tracks found in Canada and the animal that made the tracks was one of the earliest ancestors of the modern mammals.

This unique specimen has been presented by the Research Council to the University of Alberta for the Palaeontological Museum.

(from 1927 annual report)

Staff notes from all over

Dr. Sat Parkash, Coal Research Department, who is in University Hospital, wishes to convey his appreciation to Research Council colleagues for their support and kindness.

★ ★ ★

A reminder from Human Resources: all 1985 medical and dental claims must be forwarded to that department by March 31 to be eligible for reimbursement.

★ ★ ★

Peter Roaf, Public Relations Coordinator, has been named communicator of the year by the Edmonton Chapter, International Association of Business Communicators.

★ ★ ★

A two-day wood technology seminar for Alberta Agriculture engineering staff will be held at the Research Council's forest products facility March 11 and 12. The program will include discussion of markets and materials, new product developments, practical applications of building components, wood industry research and a tour of the Research Council's facility.

New policy addresses security

Most corporations today are security conscious and have a policy of restricted access. In large organizations, employees are issued with identification cards which they must use to gain access to their work site and in many instances - the National Research Council and Esso Resources are examples - all staff are required to wear an identification badge while on the premises.

The Research Council already issues identification cards to all new employees, but under a new policy approved by the Operations Committee, all staff will be issued new identification cards and must wear them at all times on Research Council premises.

The new cards, bearing the Research Council's logo, employee's name, number, and photo, will have a clip to attach to clothing.

Staff will be expected to show their identification cards to the security guard and sign in to gain access during non-working hours.

Colin Ford, Manager of Facilities Management, emphasizes that all Research Council facilities are regarded "secure areas" and the policy is an industry standard.

All access to Research Council facilities will be controlled after normal working hours with security guards on duty 24 hours a day. This is now the case in Clover Bar, Devon and Calgary. At Mill Woods there will be a security guard at the desk between the two high head laboratories and another guard to patrol the building during the period after normal working hours.

All visitors, without exception, must sign into Research Council facilities and will be issued with a numbered visitor's badge which they must wear while on the premises.

The policy also requires that all children must be under the constant supervision of a staff member and pets will not be permitted in Research Council buildings.

Facilities Management will be responsible for administration of the policy.

Volume 7, number 4

Newsline

April 1986

CANADIANA
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David King, Minister of Technology, Research and Telecommunications, recently toured Research Council facilities at Edmonton, Nisku and Devon. Above, Dr. Lars Bach, Manager of the Forest Products Program, describes testing equipment for Mr. King. Looking on, Ken Broadfoot, Deputy Minister and Dr. Alan Vanterpool, Assistant Deputy Minister of the new department; Dr. Duncan Currie, Vice-President, Applied Sciences Division; Rob Wellwood, Forest Products and Victor Jackson, Facilties Consultant.

Research Council will report to minister

The creation of a new provincial government Department of Technology, Research and Telecommunications and the appointment of David King as Minister, signals a change in the reporting route for the Research Council.

"The Research Council will report to Mr. King, but as a crown corporation, will continue to function at arm's length," says Dr. Robert W. Stewart, President.

Mr. King has been appointed to the Research Council's Board of Directors, replacing Dick Johnston.

The former Office of Science and Technology has been absorbed into the department and Dr. Alan Vanterpool has been named an Assistant Deputy Minister. The department also includes the High Technology Section from Economic Development and the Communications Policy Branch from Utilities and Telecommunications.

Agencies reporting to Mr. King in addition to the Research Council, are Access Alberta and Alberta Government Telephones.

Career development endorsed under new policy

"The Alberta Research Council recognizes the importance of its human resources to the achievement of corporate goals. Accordingly, it encourages employees development which will enhance or upgrade the knowledge and skills of employees consistent with these goals."

"Similarly, employees should acknowledge that staff development is a mutual obligation in which they are expected to use the opportunities available to develop their own potential to contribute to the accomplishments of the organization's goals."

These statements are the keystones in a new manpower and career development policy approved by the Operations Committee. The policy, drafted by the Human Resources Department, spells out in detail many of the terms and conditions already in existence for practices such as education and research leave, training courses and conference attendance. With some obvious exceptions (research leave applies only to professional staff), the policy applies to all staff.

"The policy is a well thought-out document and an important progression in the Research Council's endorsement of career planning for all staff," says Dr. Alan Sanger, Professional Staff Association (PSA) past president and member of the ARC/PSA Joint Committee which reviewed the draft policy.

In recognition of the importance of

continued on page 2

Newsline is a monthly publication
for the employees of the Alberta
Research Council

Please send all submissions
and direct all questions to
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Council, 7th Floor, Terrace Plaza,
4445 Calgary Trail South,
Edmonton, Alberta T6H 5R7

ALBERTA
RESEARCH
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Dr. Sat Parkash 1934-1986

Dr. Sat Parkash, Senior Research Officer, Coal Research Department, died March 2 following a short illness.

Dr. Parkash joined the Alberta Research Council September 1, 1967, as a research officer after two years at the University of Minnesota on a post-doctoral research fellowship. He was a graduate of Punjab University, India, receiving his Ph.D. in chemistry in 1962. From 1963 to 1964, he worked as chief chemist for the Government of India, New Delhi.

His area of study at the Research Council was coal as organic rock and he was responsible for setting up the coal petrographic analytical facilities. He held a membership on the International Commission on Coal Petrography.

In 1983 he was elected to a Fellowship of the Chemical Institute of Canada (CIC) and named a Fellow of the Royal Institute of Chemistry, U.K. He was elected to the Senate of the University of Alberta in 1984.

Dr. Parkash was a member of the Catalysis group of the CIC Edmonton Chapter, serving on the organizing committee for two international conferences held in Alberta, and also was active in community and cultural organizations.

He is survived by his wife, Vijay, and two daughters, Sheema and Madhu. Funeral service was held March 5 in Edmonton.

Ray Olson 1948-1986

Ray Olson, research technologist in the Oil Sands Research Department, died on February 20. He had been on long term disability since 1984.

A graduate chemical research technologist from the Northern Alberta Institute of Technology, Mr. Olson joined the Research Council in 1980. He previously worked for Atomic Energy of Canada Ltd., Pinawa, Manitoba, and Northern Canada Power Commission, Edmonton.

He is survived by his parents, Andrew and Joan Olson, Dawson Creek, B.C., and a sister, Corliss, Kelowna.

Funeral service was held in Edmonton February 24.

Annual report gets new look

Three to five minutes — that's all the time most people devote to an annual report. First, a typical reader will look at the financial statements, the chief executive's or chairman's summary, and then quickly skim through the body of the report.

Given these parameters and the competition with hundreds of annual reports from government and business, the goal for our annual report is to get our message across quickly and clearly.

The Research Council's 1985 annual report, due for release this month, has been restructured to meet these challenges. To clarify how our work is related to the various sectors in Alberta's economy, the contents have been organized under the headings of Agriculture, Energy, Environment, New Technologies and others. The sections run in sequence for a more unified 'corporate' approach to research and for better utilization of space.

The four-column format includes capsule excerpts in larger print, offset in the outside columns and another change for easier reading is the use of serif typeface instead of the former sans serif.

"We think the new format is better organized for our business and government audiences — we hope staff will agree," says Peter Roaf, Public Relations Coordinator. "If you have constructive comments, please let the Public Relations office know."

Open house

An open house for staff and their families in our new complex is scheduled for June 2, 4:30-7 p.m. The official opening of the building will be held in the fall.

Career development *continued*

career development, the Research Council supports education leave, research leave, staff exchange, secondment and temporary re-assignment, training and development courses, conference attendance, university and in-house seminars and meetings, personal study, career counselling and career development seminars, and management training.

"We have tried to be comprehensive," says Wolf Gut, Human Resources Department. "The policy defines the subject, who is eligible, application and approval procedures, the financial assistance the Research Council will provide, and where applicable, the return service commitment of an employee."

In the case of research or education leave, the policy makes one major change regarding return service commitments. Instead of the previous two for one basis, employees now will be expected to give a return service commitment of only one working day for each day of paid leave.

"We also say research leave should be granted on a competitive basis, but until money is set aside for that purpose and staff asked to apply for what is available, approval of research leave remains more ad hoc, based on the merits of individual cases," says Wolf. "I think this is one area in which the policy could be more specific."

The policy introduces a new section on career counselling and career development seminars which Wolf describes as "a modest but important initiative toward a manpower planning process."

A strategy for development is needed for the organization and a first step toward that goal may come from a Task Force on Selection and Development slated to report to senior management this month. The task force will focus on what the Research Council should be doing and develop positions on related issues.

The written policy is a major initiative for the Research Council which recognizes the importance of the corporation's most valuable asset - its staff, says Wolf.

"The Research Council has a large investment in its staff and it can be proud of the support it gives to its employees. The policy also fulfills a longstanding commitment to both the PSA and the bargaining unit."

Oil sands information centre now ALIS

The Alberta Oil Sands Information Centre (AOSIC) is about to get a whole new look, including a new name.

After April 1, the centre will be known as the AOSTRA Library and Information Service (ALIS), and staff, although still technically Research Council employees, will report to AOSTRA.

The change comes with a new five-year contract between the Research Council and AOSTRA (Alberta Oil Sands Technology and Research Authority) in which control for the centre will shift to AOSTRA.

Major reason for the change is to protect the confidentiality of AOSTRA's widespread clientele. ALIS will handle all confidential data from AOSTRA pilot projects, university research and the Research Council.

AOSTRA also plans to expand the centre with a two-person office in Calgary and will increase its Edmonton office in Highfield Place to 12 people from the present 10. A small library to serve in-house needs is to be added at both locations.

The Oil Sands Information Centre was set up in 1975 as a Research Council initiative and first operated only in oil sands-related data.

"We are unique in that we have a lot of information that isn't available elsewhere," says manager Helga Radvanyi-Starr. That information is in demand for an international clientele.

Oil sands data is still developing, but in more recent times the information centre has been handling data on heavy oil and enhanced recovery research as well.

"Now AOSTRA wants to actively market its technology and one of the priorities for ALIS will be to promote AOSTRA's activities in support of research," says Helga.

From its establishment 11 years ago, AOSIC was fully funded by AOSTRA, with the Research Council supplying staff. The ALIS staff will continue to be Research Council employees.

"We will be accountable for performance to the Research Council, but will report directly to AOSTRA's director of Program Planning and Evaluation," says Helga. "That post is held by David Redford, formerly at the Research Council who was technical advisor on setting up AOSIC — we have come full circle."

Eleven employees who completed an in-house supervision skills course received certificates from Dr. Robert W. Stewart, President. The course, developed by the Human Resources Department, stresses the importance of good communications and interpersonal skills. From left, front row, Dale Hite, Graphic Services; Margaret Christiansen, Financial Services; Don Peckham, Director of Human Resources; Marianne English, Atmospheric Sciences; Mitch Harbora, Financial Services; back row: Conrad Gietz, Editing and Publications Sales; Harold Kay, Materiel Management; Wolf Gut, instructor; Dr. Stewart; Frank Robitaille, Atmospheric Sciences; Sig Hollemeyer, Industrial Technologies; Bob Humphries, Atmospheric Sciences; Don Scafe, Geological Survey. Not present, Helga Radvanyi-Starr, AOSTRA Library and Information Service.

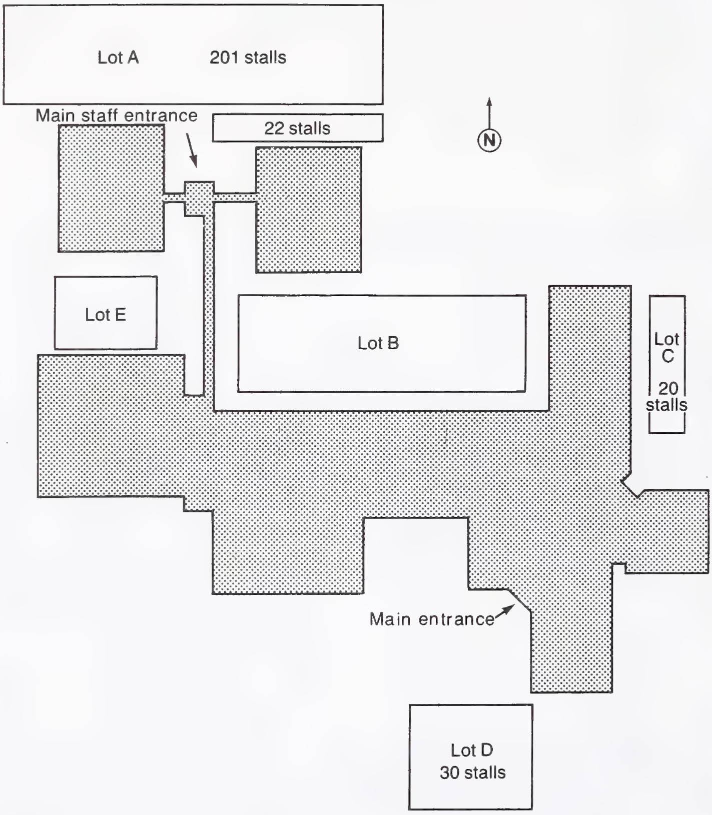
Step lively!

Those of us moving to our new complex should all become fit as fiddles!

Just think of it — all that space, inside and out, to negotiate at least twice a day. And there is some solid research to support the notion that walking is *good for you.*

A 16-year study of Harvard graduates between the ages of 35 and 74 found that men who used up at least 2,000 calories a week through exercise had a 28 percent lower death rate than less active men. Among the calculations researchers used: walking seven city blocks uses up to 56 calories and climbing 70 stairs uses 28 calories. (The distance from the staff entrance to the front entrance is approximately equal to two city blocks.) So, if you find yourself at the far end of the staff parking lot, look on the bright side — those extra steps are in your favour.

This diagram shows parking areas available for staff and visitors:



Parking Lot A - Main staff scramble parking. Includes 201 stalls plus 22 in front of east high head laboratory. Another six stalls are designated ETC visitor stalls in front of high head laboratory.

Parking Lot B - For Research Council owned or leased vehicles only. This lot will be secured after working hours.

Parking Lot C - Subsidiary scramble staff parking for 20 vehicles.

Parking Lot D - President, Vice-Presidents and public parking only.

Parking Lot E - Overflow staff parking. No plug-ins.

Stationery revamped

The Operations Committee has approved a change in the Research Council's style of stationery and envelopes to a single form letterhead, with only the location address.

The identity of departments will be shown in the signature block.

"Stationery projects an organization's image to a broad audience and in many instances represents an initial personal contact with the corporation," says Dorothy Hollands, Director of Public Relations. "The new format better reflects our corporate image and is consistent with the Research Council's visual identity."

The change will be cost effective. Instead of the present 25 forms of stationery, there will be only four (Edmonton, Devon, Clover Bar, Calgary). Simplified ordering, reduced artwork preparation and less likelihood of departments running out of stationery are among the other advantages.

Employee changes

We welcome to the Research Council: **Darlene Korpany,** Switchboard Operator, Oil Sands Research; **Marie Goudreau,** Clerk Typist, Financial Services; **Ruth McGough,** Secretary, Industrial Development; **Diane Petryk,** Clerk Typist, Industrial Technologies; **Ngoc Anna Truong,** Research Technologist, Coal Research; **Keith Chrystall,** Assistant Research Officer, **Craig MacKay,** Assistant Research Officer, and **Kevin Wipond,** Assistant Research Officer, all in Advanced Technologies.

We wish the following well in new endeavours: **Robert Booth, Warren Cree, Shirley Krause, Berengere Lobreau, Janet Marowitch, Joanne Moreau, Susan Miller, Burt Murphy, Jean Popa, Charles Ray, Ralph Rose, Lucille Sanders, Jean Shields, Debra Storr, Rudy Strobl** and **Michael Werb.**

AL.1.562

Volume 7, number 5
May 1986

Newsline

MAY - 9 1

Syncrude sends scientist here

The Research Council is embarking on a cooperative venture with one of the pioneering industrial giants in oil sands mining to study oil sands tailings sludge.

Dr. Rob Schutte, director, mine technical at Syncrude's Mildred Lake plant, has been seconded to the Research Council to head the two-year project. He will be working with Dr. Ted Heidrick, Oil Sands Research Department, at the Research Council's Clover Bar facility.

At its surface mining plant in Fort McMurray, Syncrude extracts bitumen using the hot water process invented at the Research Council. The sludge left from the extraction process to turn bitumen into synthetic crude poses an environmental challenge to industry.

Dr. Schutte's project at the Research Council will be to extend the fundamental understanding of sludge properties and consolidate various scientific theories into a single body of knowledge.

Dr. Schutte was formerly director of Syncrude's Research Centre in Edmonton from 1976 to 1984. A native of the Netherlands, he obtained a Ph.D. from the University of Alberta and holds a number of patents in tailings disposal and related research.

Come celebrate!

Plan to bring your family to the staff open house and birthday party in our new headquarters and laboratory building June 2, from 4:30 p.m. to 7 p.m.

Dr. Robert Stewart will be our host and there will be birthday cake to mark the Research Council's 65th anniversary. Plans are being made for self-guided tours through the building.

It's spring - plant something!

Technologist Twyla Malcolm, Biotechnology Department, tends some of the 2,000 alfalfa plants regenerated from tissue culture in the laboratory. These plants will be field tested this summer at the University of Alberta farm and Agriculture Canada's research station, Beaverlodge, for yield characteristics, fall dormancy and cold hardiness.

Newsline is a monthly publication for the employees of the Alberta Research Council

Please send all submissions
and direct all questions to
Elizabeth Page, Alberta Research
Council, 7th Floor, Terrace Plaza,
4445 Calgary Trail South,
Edmonton, Alberta T6H 5R7

ALBERTA
RESEARCH
COUNCIL

Transportation of dangerous goods - handling with care

The Transportation of Dangerous Goods Control Act is at least an inch thick, but its message can be summed up by the old adage, "an ounce of prevention is worth a pound of cure."

The act, proclaimed in Alberta February 1, 1986, brings into effect regulations governing the classification, handling and transportation of hazardous goods such as gases and chemicals, and outlines penalties for failure to comply with the act.

Failure to comply with the new regulations carries stiff penalties. The act calls for a fine of up to $50,000 and/or a jail term of up to two years for individuals or corporate officers convicted of a first offence. Subsequent offences carry a fine of up to $100,000 and/or imprisonment.

Dangerous goods can fall under any one of nine classifications and the Research Council handles substances in all categories. While the Transportation of Dangerous Goods Act is more pertinent to handling and shipping, the Research Council must also take the necessary precautions for the safe storage and in-house distribution of hazardous materials.

"We have policies under the Alberta statutes related to Occupational Health and Safety governing handling of hazardous goods, but to comply with the new act, we are providing training for staff involved in handling and shipping such goods," says Cliff Cameron, Manager of Materiel Management.

A representative from Alberta Public Safety Services has conducted seminars for 35 staff from administration and research departments. More intensive training is being given for 10 employees directly involved in handling and shipping hazardous material on a routine basis. All staff are issued an appropriate certificate on successful completion of the training course.

In transporting dangerous goods, the onus is on the shipper to follow the requirements in the act. Section 19 reads: no person shall handle, offer for transport or transport any dangerous goods unless:

a. all applicable prescribed safety requirements are complied with and

b. all containers, packaging and vehicles comply with all applicable prescribed safety standards and display all applicable prescribed safety marks.

"When goods arrive at the Research Council, we try to store them in their original packaging, assuming that what is safe for shipment, is safe for storage and distribution," says Cliff. "During on-site distribution, we take a number of precautions - chemicals and acids, for example, are placed in rubber containment buckets to guard against spills. Compressed gas cylinders are rolled and strapped on a specially designed pallet for easy removal by fork lift."

The Research Council's controlled stores at Mill Woods is a specially designed building with top grade life and safety standards for potentially volatile materials such as compressed gas, flammables, combustibles, oxides, corrosives and radioactives.

The Research Council also ships out chemicals, gasoline and diesel fuel samples and both solid and liquid wastes.

"Every time hazardous goods leave the Research Council, they must meet regulations with regard to packaging, volume, labelling and method of transport," says Cliff.

Hazardous wastes are collected in approved containers from labs and sent to the stores area where they are either shipped by the Research Council or picked up on a routine basis by the University of Alberta waste disposal vehicle for transport to the University of Alberta disposal site at Ellerslie.

"While we already have Materiel Management policies in place to address on-site handling of hazardous materials, the new Transportation of Dangerous Goods Act makes it necessary for the Research Council to firm up policy and procedures on the shipment of dangerous goods," says Cliff.

Staff notes from all over

Dr. Jan Boon, Head of the Geological Survey Department, is accompanying an Alberta Oil Sands Technology Research Authority delegation on a two-week visit to the People's Republic of China.

The group was invited by the Chinese Ministry of the Petroleum Industry to tour the Research Institute of Petroleum Exploration and Development, Beijing, and the Karamay and Liaohe oil fields.

Dr. Boon will give presentations on the geology of oil sands and heavy oil reservoirs, the relationship to in situ recovery processes and geochemical aspects of thermal recovery processes.

★ ★ ★

For staff participating in the Research Council dental plan who also have coverage under a spouse's dental plan, the Human Resources Department announces a new policy set by the insurance industry.

Effective immediately, claims for dental work of dependent children are to be submitted first to the plan of the parent whose day and month of birth is earlier in the year (i.e. May 10 vs. November 12). The year of birth is not important to this rule. If both parents have the same birthday, claims for children can be submitted first to either plan.

★ ★ ★

Dr. Don Gerson, Head of the Biotechnology Department, Dr. Lars Bach, Manager of the Forest Products Research Program, and Dr. Milan Selucky, Head of Analytical Services, Coal Research Department, have been named adjunct professors at the University of Alberta.

★ ★ ★

Dr. Richard Kerr, a member of the Board of Directors, has been appointed Chairman of the Board's Executive Committee, succeeding Jack Pike.

ASD affected by budget cut

The Atmospheric Sciences Department's (ASD) thrust this year will be the preparation of a final report for Alberta Agriculture, summarizing findings of the last five-year program and presenting recommendations.

Dr. Bob Humphries, Department Head, says the successful results in rain enhancement experiements as well as the significant progress made in understanding convective storms will be highlights of the report.

He also cited the recent success of INTERA Technologies Ltd., a Calgary-based company, in obtaining a $10 million contract to operate a weather modification program in Greece. A considerable portion of the technology sold to Greece was developed by INTERA while working under contract on the Alberta hail project.

The comprehensive report will be used as a basis for a review in deciding the future size and direction of the weather modification program, but this year's effort is being constrained by a budget cut.

"A budget was submitted for full funding during an interim year to continue field operations while the report was being prepared," said Dr. Humphries. "However, funding from Alberta Agriculture has been severely cut for 1986/87."

As a result of the funding cutback, the department will not carry out any field work in 1986, either in research or cloud seeding, and staff will concentrate solely on the final report.

"Unfortunately, the cutback has resulted in a reduction in the department's manpower," Dr. Humphries said, but he noted that the Research Council is maintaining its grant funding at past levels to support the staff in preparing their reports.

Pension Plan information seminars

Alberta Treasury will be conducting information seminars this fall for participants in the Public Service Pension Plan. If you wish to register for this two-hour session to learn more about your pension benefits, call Brenda Morgan, Human Resources Department (438-1666) before May 15.

All wrapped up in their work - Dr. Surindar Singh and Sam Wong engulfed in computer printouts of their economic models.

Analysts look to future

Their crystal ball is a computer, their incantations an intricate, and to the outsider, incomprehensible conglomeration of numbers and they spend a lot of time forecasting the future.

But unlike the stereotypical fortune teller, Sam Wong and Surindar Singh do not pretend to have any magical powers.

The two associate research officers are the Research Council's technical and economic evaluation group in the Energy Resources Division, charged with building the analytical framework for assessing long-term development of Alberta's energy resources, particularly oil sands and natural gas.

Data extracted from their models gives Research Council management the kind of information it needs to make today's planning decisions to ensure tomorrow's research goals.

"Long-term projections have an immediate impact on today's decisions," says Sam Wong. "Our forecasts are based on such factors as supply and demand, present-day technologies and price structures."

While they must be cognizant of current trends such as sliding oil prices, their focus is on long term issues rather than short-term fluctuations.

"No one can predict changes based on unforeseen political decisions," says Surindar. "All analysts can do is build various scenarios based on given formulas."

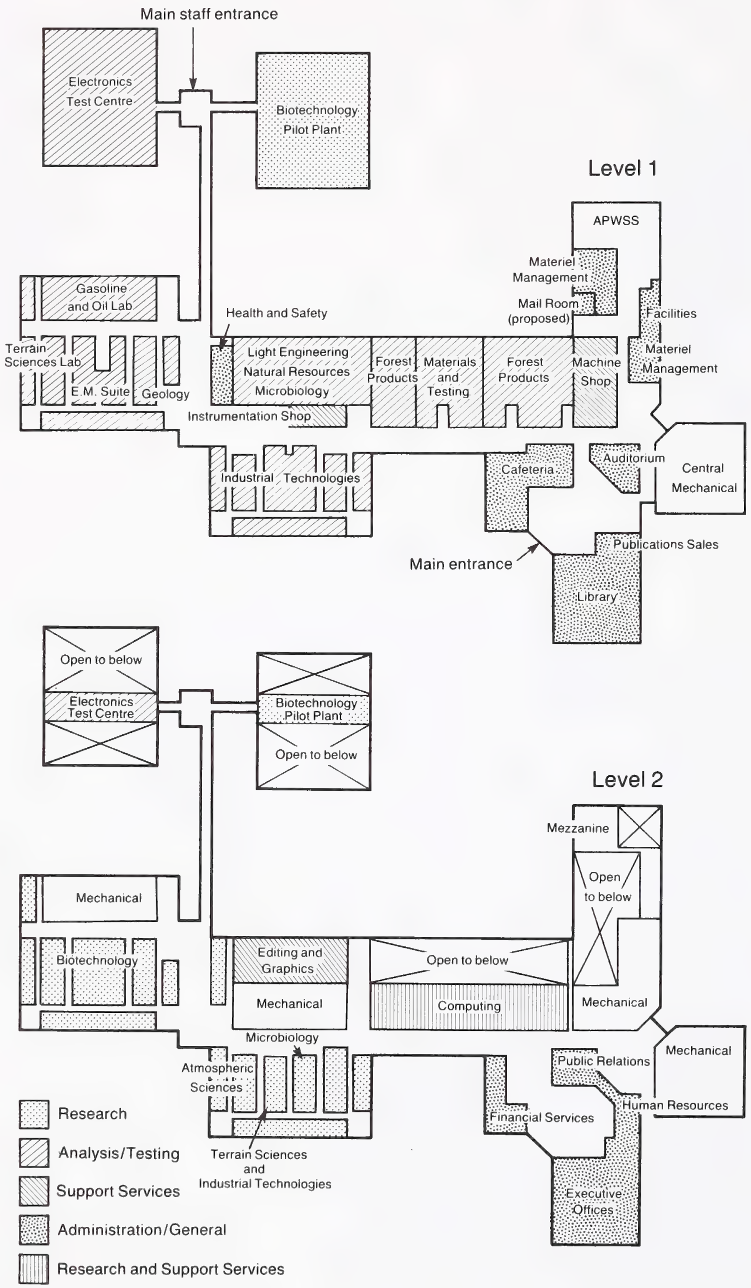
These scenario building techniques have been used to evaluate the long-term potential of the Research Council's oil sands and coal research programs and to identify the areas of research within these programs with the largest potential economic impact.

Their forecasts are not limited to the Research Council's requirements. The Energy Modelling Group is supported by four outside agencies and government departments — the Energy Resources Conservation Board (ERCB), the Alberta Oil Sands Technology Research Authority (AOSTRA), Alberta Economic Development and Alberta Energy and Natural Resources.

"Each of these agencies provides us with specific data which we can incorporate into our models to give an analysis tailored to their individual needs," says Surindar. "The results give these groups a base for comparison to other analyses and provide background information to assist in the formation of government policy decisions."

They may not have all the answers — "our projections could be wrong" concedes Surindar — but their input is a vital link in the planning process.

Who's where: Headquarters and Laboratory Complex



April 22, 1986

Direct payroll deposit cost effective

It's easy, convenient and worry-free. It's the direct payroll deposit system.

A year ago, when the Research Council introduced direct payroll deposit for employees, about 30 percent of staff joined the system. With another "blitz" from the Financial Services Department, that number has more than doubled.

"Some staff were reluctant to make the switch until they were certain the system was reliable," says Fred Noppers of Financial Services. "We haven't had any problems and payroll deposits are wired directly to an employee's bank account the night before regular pay day."

For Research Council staff working in isolated locations, direct deposit is an ideal alternative to monthly trips to a bank. Direct payroll deposit is also a boon to staff when on field assignments, travelling, or just finding pay day falls on an EDO.

There are benefits to the Research Council, too. With fewer cheques to be processed, checked and distributed, the system is proving cost effective.

A reminder about direct deposit: payments are deposited on or before the designated pay day. Direct deposit is established for mid-month and month-end salary payments and both payments are deposited to the same account. At month-end a payment information statement is distributed in the same manner as paper salary cheques in place of the regular cheque stub. No statement is issued at mid-month.

Forms to participate in direct deposit have been issued to all salaried staff and new employees are encouraged to opt for this method. If you wish to join the direct deposit system, fill out the form and enclose with a voided personal cheque or bank certification, attention Fred Noppers, Financial Services Department. If you need a form, call Fred at 450-5165.

New list issued

A new publications list of the Research Council's research bulletins, reports, information series and maps, is available from Editing and Publications Sales office.

ALBERTA
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AL.1.302

Volume 7, number 6 June 1986

Newsline

Budget process changes announced

In an effort to streamline the budget process and reduce the workload for department heads and managers in preparing their annual submissions, Financial Services is introducing a two-phase budgeting system for the 1987/88 fiscal year.

The proposed changes, outlined by Bob Moore, Director of Financial Services, at a seminar held in May for department heads and managers, call for:

- A phase one 'macro' budget with estimated revenue and expense forecast totals submitted by all department heads and managers by June 24;
- Sign-off of 'macro' budgets by divisional Vice-Presidents;
- Objective setting by all administrative departments under Finance and Administration and the executive offices;
- New time frames for the budgeting process.

In the phase one stage when preliminary budget estimates are traditionally prepared, Financial Services will be looking for the global figures each department expects to operate with in the next fiscal year. Mr. Moore said he will not be asking for detail levels by project, object of expenditure or quarterly breakdowns.

Department heads and managers will be asked to supply grant and contract revenue totals and total estimate figures for manpower, supplies and services, fixed assets, corporate overhead, inter-departmental charges and non-provincial overhead recovery. In the case of contract revenues, departments will be asked to supply the total value and the 1987/88 value along with the contract period for both existing and forecasted contracts.

Forecasts would assume Operations Committee assignment of grant monies, including adjustments made in the current fiscal year for cost of living allowance increases and the Research Council's new merit pay system effective June 1. No significant change in the grant allocation is expected from the provincial government.

Mr. Moore told managers May 20 he hoped to have the grant allocation contract revenue figures and document forms ready by June 2, but meeting that target date would depend on final grant allocation numbers.

Once submissions are in, Financial Services has allowed 10 days to consolidate the information before presenting the preliminary budget to the Operations Committee for approval in mid-July. The 'macro' budget will then go before the Board of Directors when it meets August 22.

Financial Services has set November/December as the new time frame for issuing comprehensive budget forms and instructions, some two months ahead of previous years. Mr. Moore says the earlier time will give all those preparing budgets an opportunity to discuss changes and provides time for setting objectives prior to a complete review of administration department objectives in January.

The Operations Committee is asking that all administrative departments under Finance and Administration and the executive offices put together objectives indicating their level of services, plus forecast costs showing a 10 percent increase and 10 percent decrease in funding and how services would be affected in each case.

Dr. Robert Green, Vice-President of Operations suggested that if the ad-

continued on page 2

Thirty members of the Electric Power Research Institute advanced fossil systems task force from the United States toured Research Council's facilities in May. Above, a group examines agglomeration process samples in the Coal Research Department, Nisku.

Newsline is a monthly publication
for the employees of the Alberta
Research Council.

Please send all submissions
and direct all questions to
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Budget *continued*

ministrative departments are being asked to set objectives, then research departments should be asked to set out their objectives for administrative support. Mr. Moore says research departments will be asked for these objectives in the future but observed the Research Council "has no set standards for levels of administrative support services and such standards are necessary for measuring that service. Guidelines are needed, but take time to develop and may not be in place for the 1987/88 budget process."

Mr. Moore believes a review of all administrative functions should be undertaken and the level of need examined. That information should be available for management to make decisions on how the corporation operates and to what degree it is prepared to support administrative services.

"Research areas have expanded, but clerical areas in some of the research departments have expanded faster than in the administrative departments. The costs of such expansion have a cumulative effect on overhead costs to the Research Council."

During the seminar, Mr. Moore unveiled a set of objectives for Financial Services:

- maximize the amount of funds available for research while ensuring that the Research Council can meet its financial commitments;
- assist the research departments to meet their objectives by providing professional financial advice and financial reports;
- ensure that the assets of the Research Council are protected by cost effective administrative and accounting controls.

Mr. Moore says his department has evolved from a "bookkeeping operation into an accounting process. We are now doing everything but finance, which is the next step. We need to be forecasting the implications of current decisions, where the Research Council is going to be, analyzing costs and potential savings, in other words be active in project management. Our surveys of other corporations heavily involved in research, in both the public and private sector, indicate that project management with strong accounting practices, is becoming accepted practice for cost effective operations."

For additional information call Bob Moore, 450-5153.

Technologistss working in enclosed sterile environment in Biotechnology Department: Len Force prepares DNA solution while Linda O'Carroll dissects alfalfa shoot.

A biotechnology fish story

The discovery of recombinant DNA and the subsequent marvels of genetic engineering have opened the research floodgates to possibilities once the stuff of science fiction.

Take the Research Council's own work in biotechnology. Dr. Bob Irving and Dr. Tony Chen are preparing to clone a fish gene into an alfalfa plant. It's technically feasible - "the technology is there. We have to experiment to find out whether it will work," says Dr. Irving.

The fish gene, found in winter flounder, keeps this native of Arctic waters from freezing, and the Research Council scientists are hoping that this antifreeze gene could do the same for alfalfa plants. Alfalfa, one of Alberta's most important forage crops, is particularly susceptible to winterkill.

Using the techniques of genetic engineering, Dr. Irving and Dr. Chen are modifying the antifreeze genes for insertion into the plant cells.

"The fish gene can't be used by the plant cells now, but if we cut the ends of the genes, taking away the fish pieces of the DNA, replacing them with plant DNA, then we can insert the modified antifreeze gene into a prepared plant plasmid. The next step is to insert this plant plasmid containing the antifreeze gene into alfalfa plant cells," explains Dr. Irving.

Once the DNA has been inserted, the researchers will study the cells for antibiotic resistance and hormone independence, two of the control methods used for determining if the plasmid with the inserted gene is present. Cells showing the presence of the plasmid will be selected and allowed to multiply until they form small plants.

Dr. Chen plans to grow these plants to maturity, gather the seed for a second planting, and test the second generation plants for cold tolerance. The entire project, funded by Farming for the Future, is expected to take about two years.

Meanwhile, the fish antifreeze gene is serving another role, as Dr. Irving tests its potential in other host cells for the manufacture of large amounts of protein.

"When scaling up large batches of cells for protein, the plasmids containing genetically engineered genes can be lost in an unstable environment," he says. "What we are trying to do is construct plasmids that will remain stable and we have selected the antifreeze gene because it is 'unreactive' and does not break down under manipulation."

This work is being carried out as a prelude to large scale production in the Biotechnology Department's fermentation pilot plant. If the research on the antifreeze gene proves successful, it will give Research Council scientists an attractive advantage for biotechnical companies seeking fermentation processes in developing their products.

Career training - other alternatives

One of the things to consider when picking training courses is whether training is in fact the most appropriate response to a perceived need. To do this it is important to distinguish between a reaction to a problem, a training need and a developmental need.

Wolf Gut, Human Resources Department, outlines some alternatives to training courses which should be more routinely considered by both staff and managers.

1. Consider first such alternative solutions as better materials, better methods, better machines or more money.
2. Effective orientation to group norms or organizational culture often is a better solution than communications and interpersonal skills training and as a means to prevent some problems from arising as well as enhancing total effectiveness.
3. Similarly, on-the-job training where employees have access to more experienced staff tends to be much more effective than expensive off-site training where content is never fully relevant.
4. Look at the organization regularly as the source of problems that training is expected to solve. Often the problem originates in communications barriers, structure of the unit, unclear or overlapping roles. Better results can often be obtained from problem solving meetings, team building sessions and clarification of job objectives.
5. Self-study. One survey on managers' reaction to management development found that on-the-job development, self-study and self-development were much more effective than off-the-job development programs. Today much training is available via computer software in addition to audio-tapes, films and print.
6. Job enrichment and job redesign. Often training courses are used to satisfy developmental needs that concern themselves with the total growth and effectiveness of the individual, or future expectations for individuals. Job enrichment and job redesign can be the answer to some of these development needs while improving the quality of working life and performance.
7. Secondment and transfer. This is a type of on-the-job training and may be appropriate for answering specific training needs or development needs. Both staff and managers should consider this option more often.
8. Leave. Occasionally leave for the purposes of returning to school, visiting another institution, or field work are more useful than a training course.
9. Alternative employment. In some cases training is used to defer a difficult decision that an employee is not suited to the particular work environment. Certainly a decision by an employee to resign is not taken lightly, but occasionally is the only practical alternative.

It should be remembered that a positive attitude toward self-development by individuals and a supportive attitude by management are keys to success of any initiative.

Minister appointed

Les Young has been named Minister for Technology, Research and Telecommunications. Mr. Young, who represents the Edmonton Jasper Place constituency, served as Minister of Labour for eight years until the recent provincial election.

The Research Council reports to Mr. Young as Minister of the department, created by Premier Don Getty earlier this year.

Government appointments to the Research Council's Board of Directors had not been made by May 30.

Staff notes from all over

Dr. Grant Mossop, Geological Survey Department, has been elected president of the Geological Association of Canada for a one-year term.

★ ★ ★

Research Council scientists are giving presentations in the Far East. Dr. Toshi Kaneda, Research Fellow, is spending five weeks in Japan under the invitation program supported by the Agency of Industrial Science and Technology, Ministry of International Trade and Industry of Japan. He will be giving research seminars at universities and institutes in the Tokyo area.

Dr. Don Gerson, Dr. Manoj Kole and Dr. Alan Jones, Biotechnology Department, are giving a series of lectures on biochemical engineering and fermentation technology at the Wuhan Biotechnology Research and Development Center, Wuhan, Hubei, China.

★ ★ ★

Dr. Mike Kessick, Industrial Technologies Department, has been elected chairman of the Edmonton section of the Chemical Institute of Canada. Dr. Nancy Cyr was elected treasurer.

★ ★ ★

The Edmonton section of the Canadian Society of Chemical Engineering has elected Dr. Dan Prowse as chairman of its executive council, and John Starr as treasurer. Both are in the Oil Sands Research Department.

★ ★ ★

Dr. David Mitchell, Dr. Brian Barge, Jacob Reichbart and Chuck Harrison, were among the Calgary participants in a teleconference, Advanced Manufacturing Technologies via Statellite, sponsored by the Institute of Electronics Electrical Engineering education branch. The conference covered North and Central America with 147 centres taking part and had a total audience of 12,500.

Bernie Laydon closing up shop

After nearly 20 years minding the shop at Clover Bar, Bernie Laydon is retiring.

A skilled machinist, Bernie joined the Research Council in 1958, a few months after arriving in Edmonton from his native Britain. He learned his trade while serving with the Royal Electrical and Mechanical Engineers during the Second World War, and spent another decade working in large British industries.

In 1967, when the Oil Sands Research Department acquired its own machine shop at Clover Bar, Bernie was appointed foreman. From the time he joined the Research Council, he has been an active member of the Alberta Union of Provincial Employees and has served on the executive of Local 60 since 1960, including four terms as chairman.

From 1971 to the present, except for a brief absence in 1985, he has been a member of the AUPE provincial executive and he is a founding member of both the Research Council's Local 60, and the National Union of Provincial Government Employees. He is being nominated for life member at this year's AUPE convention.

Although he is retiring, he says he intends to continue his association with AUPE and he is also planning to take a refresher course in French. A longer term goal is to make a return visit to India and Singapore where he was stationed in wartime.

Bernie Laydon

One thing is certain about future travels to the Far East, he says: "it wouldn't be under canvass."

Bulletin boards going up

A new system of bulletin boards to enhance internal communication for all employees will be launched this month with the inauguration of a pilot project in the new headquarters and laboratory complex. The system will be expanded to other Research Council locations later this year.

Four bulletin board posts will be placed in high traffic areas throughout the building. Two sides of each post will be dedicated to News and Notices, covering the PSA, Occupational Health, Safety, news, announcements, staff development and career opportunities.

Another side will be assigned to AUPE Local 60 and the fourth side will be available for staff bulletins and general use to announce sports events, buy and sell items and other unspecified notices.

Michelle Limoges (450-5146) in the Public Relations unit, has been appointed Editor of the bulletin boards system to prepare copy, arrange approvals and supervise volunteer coordinators in posting and removing notices for the managed system.

Employee changes

We welcome to the Research Council: **Sylvia Andrews**, Clerk Typist, Electronics Test Centre; **Dan Budzynski**, Computer Technician, Atmospheric Sciences; **Kelly Brown**, Clerk Typist, **Heather Campbell**, Clerk Typist, Geological Survey; **Lee Cardwell**, Clerk Typist, Atmospheric Sciences; **Fay Galbraith**, Clerk Typist, Financial Services; **Shaughan Holden**, Associate Research Officer, Industrial Development; **Dana King**, Stock Clerk, Materiel Management; **Terry Krauss**, Associate Research Officer, Atmospheric Sciences; **Joanne LaFontaine**, Clerk Typist, Industrial Development; **Sheila McIlraith**, Assistant Research Officer, Advanced Technologies; **Joan Moore**, Secretary, Vice-President's Office, Finance and Administration; **David Pauls**, Junior Research Officer, Terrain Sciences; **Ernest Perkins**, Assistant Research Officer, Oil Sands Research; **Dawn Schooley**, Clerk Typist, Oil Sands Information; **Lois Schmidt**, Secretary, Biotechnology; **Cindy Sieben**, Clerk Typist, Electronics Test Centre; **Tad Sudol**, Assistant Research Officer, Oil Sands Research; **Chris Talliss**, Research Technician, Electronics Test Centre; **Hope Tupper**, Clerk Typist, Industrial Development; **Darrell Turnbull**, Research Technologist, Terrain Sciences; **Faye Zasadny**, Research Technologist, Terrain Sciences.

We wish the following well in new endeavours: **Martha Dochuk, Christopher Ewing, Robert Gregory, Maxine Honderich, Cheryl Hutton, Helena Imeson, Emlyn Koster, Bernie Laydon, Bonnie Quick, Robert Ransom, and Russell Wells.**

Census Day was June 3. You are reminded to complete and mail the census form.

Volume 7, number 7 July/August 1986

Newsline

Policy manual provides reference

A set of policies is more than a collection of operating procedures. A policy manual, such as that of the Research Council, establishes the work environment and is a written documentation of the "culture" of an organization.

A policy manual also explains what is mandatory, who is responsible for given areas and defines the boundaries in which staff function within the organization's framework. It is a public document and at the Research Council, copies are available to all staff either in their department or in the library.

The manual provides a reference for everyone with any questions about procedures, overall corporate objectives, benefits and rewards for staff, maintenance of health and safety standards, and is an invaluable information source for new employees.

Dr. Robert Green, Vice-President of Operations, has guided the development of the Research Council's policy manual over the last five years. Prior to 1980, the organization had no written policies and procedural matters were dealt with in what he calls "the oral tradition - how to do something was based on word of mouth, which left wide latitude and variations in interpretation and handling of day to day operations."

Written policies not only ensure consistency for management and staff, says Dr. Green, they provide a guarantee that people are equally treated.

That is not to say policies are cast in stone. According to Dr. Green, "if there is a policy it ought to be followed. But if one thinks a policy is wrong, then there is every reason to present a case for having it changed. One is not free to ignore it."

Such a step can be initiated either through a department head or directly with Dr. Green. All policy proposals eventually must go to the Operations Committee for approval and should have the added support of the area directly responsible for carrying out the policy.

But Dr. Green cautions against corporate over-indulgence in policy-making.

"You don't want to lock yourself into everything with policies. That inhibits flexibility and can lead to the policy being ignored."

New policy for meeting rooms

Under a policy governing meeting rooms in the new building, the auditorium, boardroom and the conference room, second floor, are available to all staff requiring meeting space.

Facilities Management is responsible for reservations for these areas and booking should be done through the main receptionist. All other meeting rooms are the responsibility of the departments in which they are located.

The boardroom and conference room will be equipped with overhead projector, screen and flipchart and the auditorium will be equipped with audio-visual equipment.

All audio-visual equipment will be supplied and maintained by Facilities Management and equipment not on permanent assignment can be ordered from Facilities Management. Users will be requested to sign for equipment on loan and it is Facilities Management's responsibility to deliver, test and set up equipment.

The policy also allows for use of these meeting rooms by other tenants of the Edmonton Research and Development Park. Requests by other organizations or societies (in which staff members participate) for use of the facilities outside of normal working hours must be made in writing to the Vice-President, Operations, or Vice-President, Finance and Administration. Any extra costs for security are to be borne by the user.

Technical seminars to begin in September

To increase staff awareness and appreciation for the work of their fellow researchers, a series of technical seminars will be inaugurated in September in the Research Council's auditorium in the new complex.

Dr. Peter Tremaine, Oil Sands Research Department, will give the first presentation September 16 at 11 a.m. His topic is Physical and Chemical Properties of Fluids at in situ Recovery Temperatures and Pressures.

The seminars are designed as a focus for all research staff in emphasizing the importance and relevance of their work to the Alberta economy, to reinforce the leading role the Research Council plays in getting technology into the private sector, and to engender a sense of pride among staff for their leadership role in the research community.

"I commend these presentations to all professional staff as an opportunity to broaden their knowledge and understanding of the work of their colleagues," says Dr. Robert W. Stewart, President.

Other speakers in the series this year will be Dr. Brian Hitchon, Research Fellow, October 21, on Swan Hills Waste Disposal and Dr. Ernest Chang, Advanced Technologies Department, November 18, on Expert Systems and Their Applications in Alberta.

Newsline is a monthly publication
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Please send all submissions
and direct all questions to
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Group to explore flexible benefits

As a Research Council employee, are you interested in a flexible benefits program to replace the existing benefits package covering medical, dental, life, accident and long term disability insurance?

This question will be put to staff this summer by a Study Group established to investigate a flexible benefits program for the Research Council. Study Group members Lawrence Andriashek and Birbal Singh (PSA representatives), Don Ungarian and Brian Hunt (AUPE), Rick Richardson (general member) and Maja Hoeing (Human Resources Department), have begun preliminary investigations and will work with a consultant in preparing for staff information meetings expected to be held later this month and in August.

The fesibility of such a benefits program will depend to a large extent on the interest of employees and the Study Group will be seeking opinion from staff. All employees will be notified of the time and place of the information sessions.

The concept of flexibility was introduced about 15 years ago, but only recently has interest increased as a result of greater diversity in the modern workforce. Employers also have become more receptive to the approach as computer technology has simplified administration and benefit costs have risen.

The Research Council's primary interest in investigating a flexible benefits program is the recognition that staff should have an opportunity to participate in determining their compensation package if they so wish, thereby increasing the value to employees. It is not the Research Council's intention to reduce its commitment to benefits.

Flexibility offers choices to the employee to maximize the value he or she receives for the benefit dollar. For example, an employee with a working spouse may have dual dental coverage which he or she does not wish to have; or a single employee may consider it unnecessary to carry life insurance. Under a flexible benefits program, an employee could choose to eliminate such coverage and request that his or her benefit dollar be applied to another benefit.

Flexible benefits programs also offer opportunities to rearrange payment of premiums shared between employer and employee to give the employee the best tax advantage for his or her dollars.

Members of the Study Group are confident that flexible benefits program is "something worth investigating and hope staff will be active participants."

The Study Group expects to complete its investigations early in September. If the results are favorable and approved by the Operations Committee, program details will be developed by the Human Resources Department in time for implementation January 1, 1987.

75th lectureship speakers announced

Lecturers in the University of Alberta's 75th lectureships for 1986 have been announced:

Distinguished physicist and Nobel laureate, Dr. Roslyn Yalow, New York, to give the John A. Allan Lecture in Science, September 25;

American author and former presidential advisor, Dr. Don Paarlberg, West Lafayette, Indiana, to give the Nathanial H. Grace Lecture in Agriculture, September 30;

Founding president of the Natural Sciences and Engineering Research Council (NSERC), Gordon MacNabb, Kingston, Ontario, to present the Robert M. Hardy Lecture in Engineering, October 14.

The three lectures, presented each year under the general theme of Science, Technology and Society, were a gift from the Research Council to the university in recognition of its 75th anniversary.

Dr. Yalow is Professor Emeritus at Albert Einstein College of Medicine, and a Fellow of the New York Academy of Science, the Radiation Research Society, and the American Association of Physicists in Medicine. She serves as senior medical investigator for Veterans Administration and Director of the Solomon A. Berson Research Laboratory, VAH, Bronx, N.Y. Dr. Yalow holds a Ph.D. in physics from the University of Illinois, where she also received an honorary D.Sc. and she holds 36 other honorary degrees from universities in the United States, France, Argentina and Israel.

Dr. Paarlberg, Professor Emeritus at Purdue University, has held appointments from three Presidents—Eisenhower, Nixon and Ford—having been Assistant to the President, Coordinator of the Food-for-Peace program, Assistant Secretary of Agriculture, and Director of Agricultural Economics. In 1979 he received an honorary Doctor of Agriculture from Purdue.

Gordon MacNabb's career in the federal public service includes more than 11 years with the Department of Energy, Mines and Resources in senior positions. He was also president of Uranium Canada Limited for 10 years, chairman of the Energy Supplies Allocation Board, and is chairman of the Columbia River Treaty Permanent Engineering Board, a position he has held since 1967. He retired this year as president of NSERC to take a position at his alma mater, Queen's University as an Associate to the Principal, Associate of the School of Public Policy and part-time professor of electrical engineering.

Mossop makes rock videos

Dr. Grant Mossop, Geological Survey Department, will be moderator for three half-hour television programs about the Western Canada Sedimentary Basin for a British educational series.

The three Canadian segments, being co-produced by the BBC and ACCESS, are part of a 16-program series on the geology of sedimentary bains. The programs are shown on BBC for the British open university curricula. ACCESS will show the three Canadian segments in Alberta and market the programs throughout North America.

Titles of the Canadian programs are: Before the Mountain, on the Paleozoic rocks deposited 600 to 200 million years ago; Fold and Thrust Belt, the building of the Rockies and the mechanics of how mountains were formed; Foreland Basin, how sediments were eroded from the rising mountains and deposited eastward in the Mesozoic sequence in Alberta and Saskatchewan.

Research Council reflects 65 years of growth, change

What is the work of the Alberta Research Council? How does the Research Council support the economic development of the province? In this issue of Newsline we begin a five-part series dealing with these questions. The first article is a general overview of the organization's history and growth and how events and some of its leaders have shaped it.

On January 10, 1921, the provincial government passed an Order in Council appointing "a council of five members, to be known as 'The Scientific and Industrial Research Council of Alberta' ... without remuneration, to supervise and direct research work...".

What prompted the decision was the government's desire to ascertain the province's mineral resources and the possibilities of their development by drawing on the experts from the University of Alberta's teaching staff. For the next 30 years, the Research Council was under the roof of the university, its director served in the capacity on a part-time basis and most of the staff had dual roles in both bodies.

From the outset, three areas of research predominated - coal, geology and bitumen, with industrial and highways research, gasoline testing being added along the way, and shorter-term forays into a variety of investigations. Annual reports were issued on the work in progress and they provide not only the scientific and technical findings, but a microcosm of six decades of economic and social history.

A case in point are the first reports by Dr. Karl Clark on his investigations into reclaiming bitumen from tar sands. While Clark saw the potential for bitumen development by an oil industry, the problem of the day was not finding an energy source - coal and wood were still the chief fuels - but how to build better roads. Alberta had no paved highways, but there was a pressing need for roads. Clark wrote in the first annual report the only material at hand through the settled part of the province was the natural soil ... "it seems inevitable thatAlberta must depend on some form of earth road construction. The problem is to learn to build the most serviceable earth road." He went on to describe the 'tar sands' deposit as "essentially a deposit of road material since it is in road construction that it is most likely to find an economic use."

Clark devoted a lifetime to developing his hot-water extraction process and his name is now synonymous, not with road construction, but with oil production - his method for separating bitumen from the oil sands became the basis for the first commercial oil sands operations still used today by Syncrude and Suncor.

The Research Council suffered through two critical periods in its 65-year history, each followed by unprecedented growth and activity.

The Depression years of the 1930s brought on a curtailment of funds and without the support of the University of Alberta and the determination of the staff to keep the fledgling organization alive, it might have disappeared. By 1943, funds again were being appropriated by the Legislature, and research activity accelerated under government wartime policies which encouraged exploitation of mineral and fuel resources. But inevitable manpower and material shortages hampered research not devoted to the war effort.

A wave of expansion followed in the post-war decade. In 1950, the Research Council emerged from under the university's wing with the appointment of the first full-time director. By 1956, the staff had increased to approximately 100 people and that year was marked by the formal opening of its own laboratories and pilot plant on 87th Avenue. Further expansion with the establishment of a product research and development group and facilities at Clover Bar extended the Research Council, and the early 1970s saw the beginning of contract research.

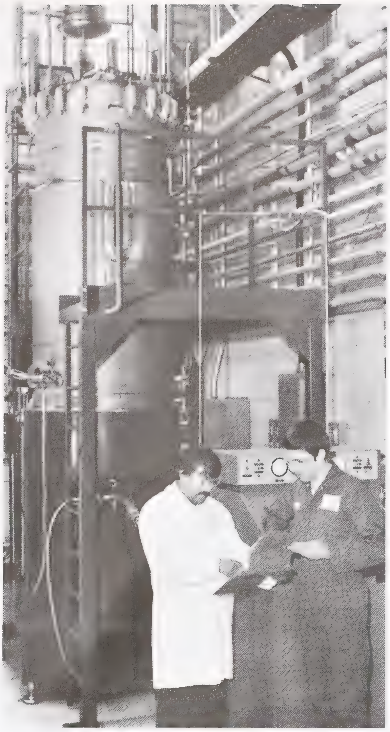
Despite this growth, the Research Council faced what some have considered its most painful period in the mid-1970s, when the organization came under scrutiny both internally and externally. Ironically perhaps, some of the problems were precipitated by the organization's growth, while other questions and criticism resulted from a changing attitude on the part of politicians, business and government.

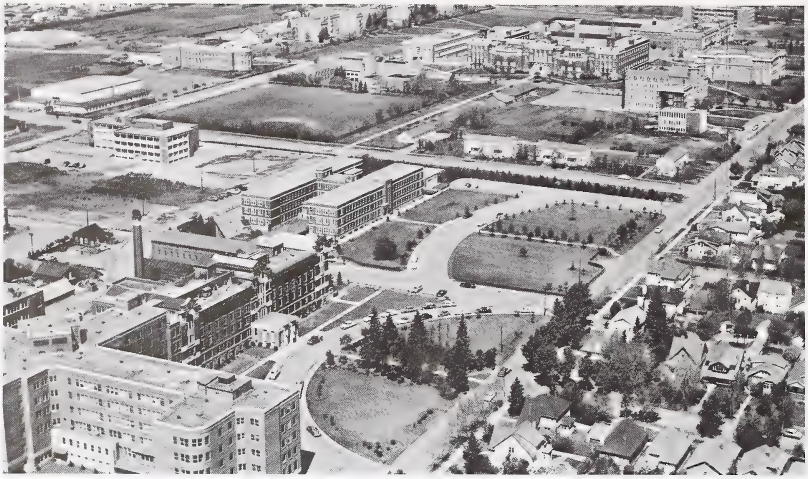
Dr. Robert Green, Vice-President of Operations, who joined the Research Council as a geologist in 1956, points out society in the past called for much less in the way of accountability and the Research Council reflected that in "being a much more free-form organization."

"The environment was similar in every research establishment - the onus was on the researcher and if the organization had responsible people with a strong work ethic and a strong interest in what they were doing, then you probably got good research results. Whether you got relevant research was a different matter."

Relevance, like beauty, is sometimes in the eye of the beholder. In its early years, the Research Council, as did other like research establishments, leaned more to fundamental or basic research, which in many cases laid the foundation for the work to come. Then, too, fewer questions were asked. Dr. Green observes, "the Social Credit government had a lot of faith in the Research Council and that it would do the right things for the province - they tended to fund it and to a large extent, leave it on its own."

The new Conservative government took a more analytical approach and asked why is there a Research Council, what is it doing, and is it useful? There





The Research Council's first real home (upper left) on the University of Alberta campus as it looked on completion in 1956 and the large fermentor in the new biotechnology pilot plant. Total area of the original building measured 2512 m², some 325 m² less than the combined floor area of the two high head laboratories in the south Edmonton complex.

was criticism, particularly from business people, that the Research Council should be doing more work directly related to business in the province.

The Research Council as it existed 10 years ago had been shaped largely by two men - Dr. Nathaniel Grace, director from 1951-1961 and Dr. Ernie Wiggins, director from 1962-1977. Both men had come to the Alberta Research Council from other research organizations - Grace from the National Research Council and Wiggins from the Ontario Research Foundation - and both had much the same philosophy: create the right environment and your staff will produce good work.

A more pragmatic approach was adopted by Dr. Gilles Cloutier, appointed president in 1978. He established an administrative hierarchy, introduced a better administrative support group, reduced much of the one-man, one-project research in favor of a team approach, and integrated the overall research into five or six main programs.

He not only sold the Research Council's staff on growth and programs, but he convinced the government of the importance of the Research Council and the inadequacy of facilities and funding. The Long Range Plan, adopted in 1979, became the Research Council's guide spelling out the direction for the next five years.

All of this represented a major change in philosophy, but the major change from within, says Dr. Green, could be summed up in one word, accountability, not only the accountability of the Research Council as a publicly-funded organization, but accountability on the part of individuals within through the introduction of a more structured performance appraisal system.

Nor is the Alberta Research Council functioning in isolation from its sister provincial research organizations and the National Research Council. With the shift in emphasis to perform basic research now falling to universities, government laboratories have had to re-examine the concept that they are the centres for such research. Addressing this question shortly after becoming president, Dr. Robert W. Stewart said the principal role of government laboratories lies in advancing the economy of their jurisdiction. The trend is toward adaptive and applied research as opposed to "pushing back the frontiers of science."

This major shift in emphasis, coupled with the economic restrictions of the last four years, has forced the Research Council to look at innovative ways to meet its mandate and attract dollars from sources other than government funding. Research agencies' appetites for funding can never be satisfied, says Dr. Green, but because governments will always place ceilings on funds, the onus is on the research organization to assign its own priorities.

The keywords are relevance and flexibility. Dr. Stewart has stressed that the Research Council must follow a business style which will see a fluctuating staff, determined by changes in direction now and in the future. In the spectrum from fundamental research to commercial development of a product, these changes will push the Research Council towards the development side of R&D. The Research Council has taken the decision to phase out areas - in chemistry, for example -while moving into the new fields of biotechnology and computer-related advanced technologies.

Dr. Green believes the Research Council is on much more solid ground compared to a decade ago - "we are responding more to the real needs of the economic sector, we have built better communication with the private sector, and we have extended our vision beyond provincial boundaries. The Research Council can no longer afford to be parochial - we must deal with the world because the world influences Alberta and Alberta's market is the world."

Dr. Stewart stresses the major function of the Research Council is to get what we do out into the world efficiently and effectively and make an impact on the economy." And he underscores his message by telling Research Council staff that to chart a narrow course tied to one particular view is a formula for disaster - the Research Council must be able to accommodate "a lot of different futures. There is no knowing which one will unfold."

At our staff open house

The staff open house, held June 2, to give staff and their families an opportunity to see our new headquarters and laboratory complex in south Edmonton, was a huge success. Dr. Robert W. Stewart, President, and Vice-Presidents—Mr. Bill Cherpeta, Dr. Duncan Currie, Dr. John Douglas and Dr. Robert Green—welcomed more than 500 people to the first major function since the building became fully occupied. The official opening is set for September 25 and an open house for the general public is also planned for the fall.

This Newsline is a combined July/August issue. The next issue will be published in September.

Dr. Stewart extends a welcoming handshake to Matthew Kochtubajda as parents Bob and Lillian, and sister, Stefanie, look on.

Getting a first hand look at what goes on in the geology lab—the Kessick family, Nancy, Mike, Liz and Sarah.

Edmonton staff were pleased to see their colle office. Here the group gets a pre-tour briefin

Chef Shirley Stevens puts the icing on the cake. The huge birthday cake was prepared by the cafeteria staff to mark the Research Council's 65th anniversary in conjunction with the open house.

gues from the Research Council's Calgary

Debra Ryby, Industrial Information, demonstrates on-line capabilities to Kevin Thompson, Curtis Tolonen, Darren Tolonen, Shawn Ryby and Bill Ryby.

The Hornby family - Carrie, Barbara, Blair and Cliff, see what's growing in the Biotechnology Department's petri dishes.

ALBERTA
RESEARCH
COUNCIL

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Newsline

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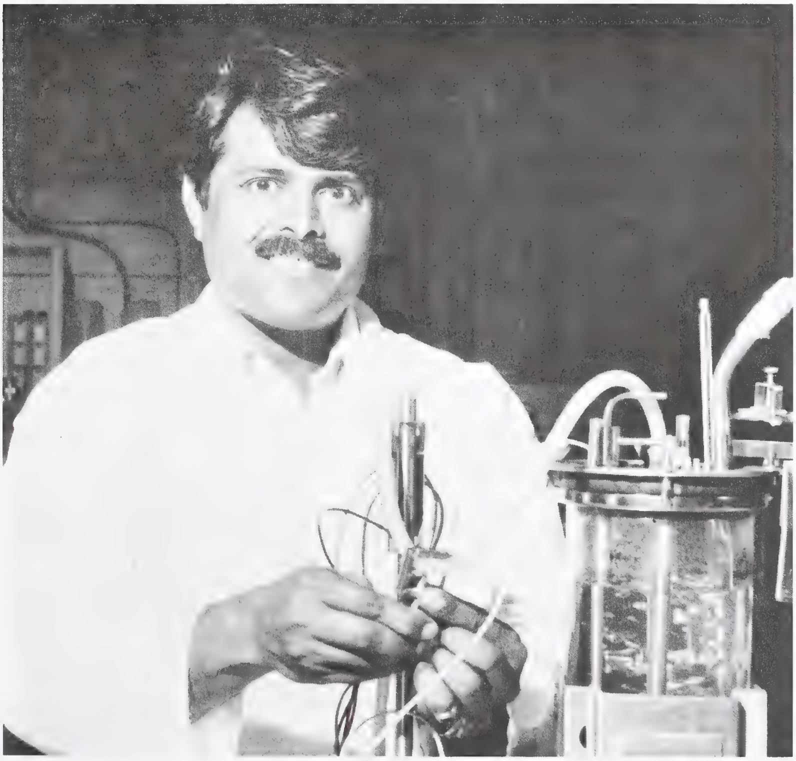
Patents: putting ideas to work

Research, by definition, is all about ideas—examining the 'what if' aspect of a subject from molecules to machinery. When scientists or engineers decide they have a new idea or finding, they have the basis for a patent which will protect that discovery.

In a research organization, patents signify not only the discovery itself, but are an indication of the quality of its staff in bringing to their work fresh ideas and sound thinking.

The Research Council maintains a policy of obtaining patents on potentially useful discoveries made by its staff and Research Council employees, as a condition of employment, are obliged to disclose any discoveries conceived by them relating to the organization's activities.



Dr. Manoj Kole, Biotechnology Department, is pictured here just before leaving August 13 for six weeks at the Heilongjiang Academy of Sciences, China, where he is lecturing on bioengineering and setting up a fermentor with pH and oxygen control systems. Dr. Kole's sojourn is under the science and technology exchange program between Alberta and Heilongjiang sponsored by Alberta Technology, Research and Telecommunications. Four Chinese scientists are expected to arrive at the Research Council later this month for a year of research.

The Research Council's list of valid patents, covering such areas as seedling containers, pipeline transportation of solids, oil sands technology, and arc welding, reflects the diversity of activity among its scientists. In addition, there are numerous patents for research undertaken at the Research Council for a sponsor, either a government department or private industry, in which case the sponsor holds the rights and responsibilities relating to patents.

A case in point is a recent patent for a static bending apparatus for grading wood panels developed by Dr. Lars Bach, Forest Products Program manager, and Dr. A.W. Porter, Richmond, B.C. The U.S. patent has been assigned to Alberta Energy and Natural Resources, which funds much of the forest products research at the Research Council's testing laboratory.

The Research Council's collaborative research with the oil industry has led to numerous patents for oil sands technology. The "sandwich filter", a unique solids control device, invented by Dr. Petre Toma of the Oil Sands Research Department, and Dr. Declan Livesey, Texaco Canada Resources, was the solution to a long-standing industry problem and the result of much experimentation before the concept was patented and assigned to Texaco.

The Research Council encourages staff to be alert to the possible practical applications of their work, offering an incentive in the form of a nominal payment to the inventory. A first payment of $250 (or $500 divided among two or more inventors) is authorized when an application is submitted. When the first patent is granted, the inventor receives a further $250 (or in the case of multiple inventors, a $500 payment is distributed).

continued on back page

ALBERTA
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Premier will open building

Premier Don Getty will officially open the Research Council's new headquarters and laboratory complex September 30 at 10:30 a.m. Also officiating during the ceremonies will be Les Young, Minister for Technology, Research and Communications; Fred Bradley, Chairman of the Research Council's Board of Directors; and Dr. Robert Stewart, President.

Invited guests, including provincial government, civic, university, industry and community leaders, will have an opportunity to tour the 30 000 square metre facilities.

Premier Getty will unveil a plaque naming the laboratory wing in honour of Dr. Robert M. Hardy. Dr. Hardy, who died last October, was an internationally recognized engineer and educator and was associated with the Research Council for nearly 40 years. He developed and supported the joint highways research program between the Research Council and the University of Alberta. The program established close ties with the provincial government's highways department, fostering significant contributions to applied research. Dr. Hardy served on both the Research Council's Technical Advisory Committee and the Board of Directors.

Noted speakers

In conjunction with the opening of the new building, two internationally renowned scientists have been invited to give lectures this fall.

Dr. Rosalyn Yalow, New York, distinguished physicist and Nobel laureate, will present a talk under the title ''The Need for Scientific Literacy'', September 26 at 2 p.m. in the auditorium.

She is also giving this year's John A. Allan lecture at the University of Alberta, September 25 at 4 p.m., when her topic will be ''Radioactivity in the Service of Humanity.''

The other speaker on November 3 will be Dr. Robert L. Youngs, Professor at the Virginia Polytechnic Institute and State University. Dr. Youngs is former chief of the United States Forest Products Laboratory, Madison, Wisconsin, and a member of the International Academy of Wood Science.

R. Gary Martin 1935-1986

The Research Council has lost one of its ablest managers with the death August 22 of R. Gary Martin at the age of 51.

During the past six years Gary directed the work of two major research departments as Head of Oil Sands Research for five years, and more recently as Head of Coal Research. He also served for several years on the Research Committee, providing intelligent direction and advice on all research projects.

Born in Kindersley, Sask., he graduated from the University of Saskatchewan in 1958 with a B.Sc. in chemical engineering. From 1962 to 1965, he studied and worked in England on an Athlone Fellowship, receiving an M.Sc. from the University of Birmingham.

He worked as a senior engineer with Celanese Canada Limited for nearly 10 years before joining the Research Council in 1974 as a project manager. At the Clover Bar laboratories, Gary successfully built and directed a 35-man team to carry out a major contract for in situ recovery research and was appointed Head of the Oil Sands Research Department on its formation in 1980.

''Gary was an outstanding manager whose contributions to the Research Council are considerable,'' said Dr. John Douglas, Energy Resources Vice-President. ''His leadership will be sorely missed, but he will be best remembered for his warm friendship and infectious cheerfulness by which he rallied his friends and colleagues whether their fortunes were up or down.''

He is survived by his wife, Betty, a daughter, Michelle Piner, Connecticut; four sons, Brad, David, Richard and Scott, all at home; his mother, Avis Martin, Kindersley; and one brother, James, Houston, Texas. Funeral service was held August 26 in Edmonton.

Geological S

The second article in a fiv
economic development of

The study of Alberta's earth resource
has been an integral part of Researc
Council activity from its inception 6
years ago, much of it centering o
mapping for general survey purposes
Research, inventory and informatio
continue to be the main activities of th
Geological Survey Department, cover-
ing four broad areas: coal geology
mineral resources, basin analysis an
petroleum geology.

''It would be difficult to manage th
abundant natural resources of the pro-
vince in a rational manner were it no
for the research and inventory infor-
mation such as that provided by th
Geological Survey,'' says Dr. Ken Bab-
cock, Vice-President responsible fo
the Natural Resources Division.

The provincial government achieve
considerable efficiencies by having it
geological research and mapping ac-
tivities located in one agency, says Dr
Babcock, and the Research Counci
plays an important coordinating rol
which cuts across departmental boun-
daries in being able to present researc
results suitable to all potential users.

Between 1982 and 1984, coal pro-
duction in Canada increased by 34 per
cent and the demand for coal to mee
both domestic energy export marke
needs is expected to rise by more tha
50 percent over the next 20 years.

Efficient development and utiliza-
tion of Alberta's coal reserves depend
on the development of comprehensiv
inventories of the coal resource and it
geologic setting, which in turn require
scientific research. Over the last fe
years, the coal geology group has bee
evaluating the coal resources of th
southern half of the province to
depth of 400 metres and has develope
an understanding of the geometry o
coal seams and some of the factor
which control coal quality.

The group has delineated hug
reserves of coal. In just one geologica
formation, the Horseshoe Canyon For-
mation, reserves of 66 gigatonnes o
potentially mineable coal have bee
calculated with an estimated worth wel
over $400 billion at 1985 market prices

Alberta Energy and Natura
Resources (AENR) has supported th

ɛy plays key role in resource management

ɛries describing the work of the Alberta Research Council and how it supports the
ince.

inventory program in cooperation
the Research Council since 1974
the inventory will be fully in-
ated into AENR's Natural
urces Information System. A new
ract for further research is now be-
negotiated between the Research
ncil and AENR. Coal mining
lopers and producers are equally
ested in the Geological Survey
artment's studies as is the Research
ncil's Coal Research Department.

another area, the Research Coun-
s engaged in the inventory and
agement of the province's sand
gravel resources. If sand and
el do not have the glamour associ-
with higher profile resources such
l, its importance cannot be over-
ated.

ad construction, concrete produc-
asphalt production, railways and
nds projects are dependent on ag-
ate. In 1983, 42 million tonnes of
egate worth an estimated $116
on were produced in Alberta, 40
ent of it in the Edmonton-Cold
-Lloydminster region.

ys Dr. Jan Boon, Head of the
ogical Survey Department: "The
of the aggregate group is a shin-
xample of the importance of this
of research—the maps produced
ke hot cakes."

r the past 10 years the aggregate
ct has been providing AENR with
gical maps and reports pertaining
gregate and the information has
used effectively for land manage-
of crown lands. Other users in-
various provincial and municipal
use planners and developers. The
gate project not only provides
ical data, it has undertaken a
rehensive assessment of produc-
rates, projected demands and
y-demand relationships and has
tly issued an in-depth report con-
ng aggregate management recom-
lations for the Edmonton/Lloyd-
er region.

e of the more beneficial ap-
hes to scientific research is the
concept—specialists in different
working together to inter-relate
findings. The Basin Analysis Section, for example, has recently completed two major hydrogeological studies for Alberta Environment and the Alberta Special Waste Management Corporation. Such assessments of the pattern and distribution of underground fluid movement are invaluable in planning long-term water supplies for oil sands plants and the management of deep waste disposal.

Much of the Geological Survey Department's work is done on computer terminals or at the drafting table, but some field work still requires a geology hammer. Here Julian Fox investigates a rock site for the aggregate inventory.

"The expertise of the Basin Analysis Section enables it to put together packages no one else has," says Dr. Boon, and he hopes to be able to offer similar "expert packages" in oil sands in cooperation with the Research Council's Oil Sands Research Department.

Numerical models are used in industry to test various scenarios and Dr. Boon wants to link the Geological Survey's expertise with the numerical modelling capabilities in oil sands research.

"The work done to date has been a great support to the petroleum industry, especially those involved in thermal pilots focused on the assessment of immense non-conventional oil sands and heavy oil deposits, giving companies both regional and detailed pictures which help them in deciding pilot location and scale, strategies in comparing relative recoveries from their sites with recovery from other sites, and interpreting results in terms of the geological character of the reservoir."

Under a new contract between the Research Council, the Alberta Oil Sands Technology and Research Authority (AOSTRA), and Energy and Natural Resources, the Geological Survey Department is developing a program of resource assessment, reservoir modelling, and pilot process monitoring.

Through the traditional role in supporting government departments and agencies, the Research Council has built a unique expertise in the field of geologic studies. As the emphasis of research organizations shifts in the direction of more applied research, the Geological Survey Department is examining new directions in which to utilize that talent, particularly in support of the private sector. Some of this thrust, as already mentioned in the case of oil sands geology, is via an agency such as AOSTRA. But another example is the proposal to work in cooperation with the petroleum industry in producing a synthesis geologic atlas of the Western Canada Sedimentary Basin, and make that information available through electronic data bases.

"Such an atlas is a good example of the impact of new theories and technologies on so-called classical geology," says Dr. Boon, "and what is equally important is that our scientists use the most current ideas in their field to conduct their research in aiding the provincial economy."

Staff notes

Date to remember: October 1 at 11:00 am, Mill Woods auditorium, inaugurating the Research Council's Technical Seminars. Dr. Peter Tremaine, Oil Sands Research, will be speaking on Physical and Chemical Properties of Fluids at in situ Recovery Temperatures and Pressures.

These monthly seminars are intended to increase awareness appreciation among staff of our research projects and to emphasize the importance and relevance of this work to the Alberta economy.

Employee changes

We welcome to the Research Council: **Peter Brackett**, Associate Research Officer, Industrial Development; **Jill Crawley**, Administrative Professional Officer, Library Services; **David Dal Molin**, Junior Research Officer, Advanced Technologies; **Lisa Graham**, Clerk Typist, Library; **Laura Fitzpatrick**, Clerk Typist, Biotechnology; **Norma Forrest**, Senior Secretary, Oil Sands Research; **Katherine Hamilton**, Research Technologist, Geological Survey; **Steve Kirincic**, Junior Research Officer, Industrial Technologies; **Francis Lambert**, Assistant Research Officer, Biotechnology; **Linda Laszchuk**, Research Technologist, Biotechnology; **Jennie Lutz**, Research Technician, Terrain Sciences; **James A. Melnichuk**, Research Technologist, Industrial Technologies; **Maureen Osborne**, Switchboard Operator, Facilities; **David Pauls**, Junior Research Officer, Terrain Sciences; **George Reed**, Assistant Research Officer, Industrial Technologies; **Darrel Reid**, Research Technologist, Terrain Sciences; **Jean Stein**, Clerk Typist, Industrial Technologies; **Jill Trask**, Clerk Typist, Materiel Management; **Arthur Willis**, Junior Research Officer, Oil Sands Research; and **Dr. Piotr Wojcik**, Assistant Research Officer, Advanced Technologies.

We wish the following well in new endeavours: **Sandra Barnett, Douglas Cant, Rossano Chisotti, Peter Clark, Alex Harrington, William Huiskamp, Joanne Lafontaine, Christian Meintzer, Marlene Nelson, Rao Puttagunta, Catherine Sampson, Don Scott, Sharon Steele.**

Patents

continued from front page

No further payments are made for additional patents granted for an invention, but if an invention is worked successfully, the inventor and associates who have contributed to the project may be proposed for one of the Research Council's rewards for outstanding achievement. Last December, awards totalling $17,000 were presented to four Research Council employees who developed the membrane technology for separating industrial gases after International Permeation Inc., Calgary, was formed to commercialize the process. The recipients, Dr. Harry Habgood, now retired, Dr. C. Pan, and technologists Earl Hadfield and Marty Shurek, worked on the development which had its beginnings in experiments of Dr. Habgood's 25 years earlier.

It is not sufficient just to have a good idea. The onus is on the inventor to provide all the information relating to patenting to justify why it is a good idea. The patent office will raise questions on the first application and the inventor must be prepared to substantiate claims—if claims are not well thought out, they are harder to defend.

The inventor's first step is internal disclosure, when he or she puts the idea or process on paper and has it witnessed as documented proof for priority date. Normally the Research Council requires the disclosure to be made through the project manager to the sponsor and, on a confidential basis, to the appropriate department head and divisional vice-president. At one time, such disclosures went to a patent committee, but that committee has been disbanded in favour of the individual department head and vice-president.

If the department head and/or sponsor agree to proceed with a patent application, they will assign a patent attorney. The Research Committee or a special ad hoc committee will arbitrate any issues or disputes regarding the application. If the decision is against patenting, the rights to the invention are normally returned to the inventor, who could choose to proceed with a patent action at his/her own expense.

But patents are pricey—legal fees of $4000 for a Canadian and U.S. patent on one invention are not unusual. To maintain patents in several countries for an individual invention can easily run to six figures. Unless there is a good prospect of commercialization, prestige and protection carry a high price tag.

The payoff, in view of Dr. Robert W. Stewart, lies in the successful transfer of a scientist's ideas from the incubation stage into the marketplace where it will contribute to the economic development of the province.

In the research business, commercial applications for patents are not always readily at hand. As in the case of the gas separation membrane process or the first patent associated with the Research Council—Dr. Karl Clark's hot water process for bitumen extraction—these ideas had to wait for technological refinement and economic viability. But both cases point up the necessity of acquiring protection through patents in the first place, so that the benefits from ideas such as these accrue to Alberta.

If commercialization is a patented idea whose time has come, orchestrating that timing is perhaps the biggest challenge of all. A patent gives an inventor a "leg up on the competition" says Dr. David L. Mitchell, but the idea must be matched with the development process and public acceptance while the patent is still effective. A patent protects a discovery for 17 years after which the idea moves into the public domain. Once that happens, the inventor and/or sponsor no longer can hope to see any monetary returns for that invention.

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for the employees of the Alberta
Research Council.

Please send all submissions
and direct all questions to
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ALBERTA
RESEARCH
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October 1986

Newsline

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Premier lauds new building

The Alberta Research Council is the focal point of the government's commitment to making Alberta the leader in research and technology in Canada, Premier Don Getty said in officially opening the new laboratory and administration complex September 30.

"Here in southeast Edmonton, we have a world-class, state-of-the-art research and testing centre that puts our Research Council in a superior, unique position...capable of responding to the needs of this province for research and development."

Before an audience of 250 guests, many of them industry and government leaders, and Research Council staff, the premier paid tribute to those who had the foresight to lay the foundation for Alberta's future, saying "we must make the breakthrough in broadening Alberta's economic base beyond our traditional agriculture and energy resources." He cited tourism, forestry and technology as Alberta's other strengths.

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Tour 4
Areas E F G H & J
EXIT

Premier Don Getty addressing guests and staff. Later the premier "cut" an electronic ribbon, an impressive bit of high tech put together by staff from the Computing and Atmospheric Sciences departments.

ALBERTA
RESEARCH
COUNCIL

Premier

continued from first page

"We invest $750 million a year in research in this province—the largest per capita in North America. That investment is starting to pay off, through the tremendous cooperation between our industries, universities and government," Premier Getty said.

"We have challenges facing Alberta. They are challenges we are capable of handling and I know with facilities like this and our commitment to broadening our economy, and with our natural strengths, our potential is unlimited."

Sharing the podium with the premier were Les Young, Minister of Technology, Research and Telecommunications, Fred D. Bradley, chairman of the Research Council's board of directors, and Dr. Robert W. Stewart, president.

Tracing the history of the Research Council, Dr. Stewart said its function is to be close to the economic activities of the province.

"What we are trying to assist most now is the utilization of the human resources of intelligence, education and initiatives that exist in this province. The word for this is diversification...It is with both pride and humility that I and my fellow staff members at the Alberta Research Council look upon this facility. It represents a commitment on the part of the government and the people of Alberta towards research and the advantages research can present to this province. We have every intention of fulfilling your trust."

Wing dedicated to Dr. Hardy

A laboratory wing of the Research Council's new complex has been named the Robert Macdonald Hardy wing in honor of one of the Research Council's longest serving members of the board of directors and a lifelong advocate of engineering and education.

At the official opening of the building, a plaque was unveiled by his family, Alex and Veronica Hardy and infant, Matthew.

"My father was always a great believer in the work of the Research Council, in particular as a tool by which people of all ages could further research to improve the quality of life in this province," said Alex Hardy in expressing his thanks for the honor accorded Dr. Hardy.

Dr. Hardy, who died a year ago, developed and supported the joint research program in highway engineering carried out by the Research Council within the University of Alberta's civil engineering department. The program established close ties with the provincial government's highways department, fostering significant contributions in applied research.

Former dean of engineering at the University of Alberta for two terms and founder and chairman of R.M. Hardy and Associates Ltd., Dr. Hardy was a member of the Research Council's Technical Advisory Committee from 1946-1959, when he was appointed to the board of directors, a position he held until 1984. In 1974, he was awarded the Order of Canada.

Veronica Hardy and Matthew looking on as Alex Hardy and Les Young, Minister of Technology, Research and Telecommunications, unveil plaque honoring Alex's father, Dr. Robert M. Hardy.

In the Forest Products testing lab, Dr. Lars Bach explains product development to Dr. Gordin Kaplan, vice-president, research at the University of Alberta, Fred D. Bradley, MLA and chairman of the Research Council's board of directors, and Jack Hillier, vice-president for western Canada, Northern Telecom.

Staff notes from all over

Dr. Brian Barge, Head of Advanced Technologies, will be the speaker at the monthly dinner of the Edmonton Council for Advanced Technology (ECAT), October 23 at the Convention Centre. His topic will be "Advanced Technologies: Their Transfer to Alberta Industry."

★ ★ ★

Dr. Lars Bach, Manager, Forest Products Program, and co-inventor Andrew Porter, Richmond, B.C., have been awarded a U.S. patent for their static bending apparatus for grading wood panels. Dr. Bach also has been elected to the New York Academy of Sciences.

★ ★ ★

Alvin Ewanchuk is the new foreman of the Clover Bar machine shop, succeeding Bernie Laydon, who retired last spring.

★ ★ ★

Newsline will be at the printers as we say goodbye to Stephanie Wilson and wish her every success in her new caree as occupational health nursing coordinator for the British Columbia Institute of Technology in Burnaby, B.C.

The Human Resources Department announces, that to fulfill provincial government regulations requiring a nurse on site, Penny Palsson, RN, OHCN, will assist the Occupational Health Unit at all Edmonton and area Research Council sites on Tuesdays, Wednesdays and Thursdays. Shirley Chandler, who has been assisting the health unit during the past year, will work Monday and Fridays.

★ ★ ★

Dr. Brian Barge, Head of Advanced Technologies, has announced the following staff reorganization: Maurice Engler, former manager of joint research ventures, is now manager of automation technologies, with continuing responsibility for technical aspects of joint research ventures and industrial contracts in the area of automation technologies; Bob Hipkin has been named manager of joint research ventures, contracts and support systems; and Jacob Reichbart has assumed responsibility as technical director of special projects, which will include development of a marketing program.

★ ★ ★

Dr. Brad Thompson, Biotechnology Department, has been named Canadian representative to the standing committee governing the uses of biotechnology in space for COSPAR, the international committee on space research.

★ ★ ★

Congratulations to the Research Council's slowpitch team for capturing the Capital City Slowpitch League championship this year. Team members included Dixon Edwards (coach), Mike Prentice (assistant coach), Shaun O'Connell, Doug Boisvert, Don Mah, Marc Prefontaine, Brad Anderson, Henry Meng, Mark Lazar, Walt Leps, Les Rawluk, Jennie Lutz, Brenda Sawyer, Brian Sawyer, Phil Chung, Steve Stayvos Micheoldes, and Conny Thomas.

★ ★ ★

Bob Moore, Director of Financial Services, announces the following changes for his staff: Marilyn Grabowski assumes responsibility for accounts receivable and Linda Schmidt becomes her assistant in this area. Joan Davis has assumed responsibility for the general ledger and Fay Galbraith is her assistant.

Staff like benefits proposal

Based on positive response to a survey of staff last August, the Flexible Benefits Study Group is preparing a recommendation for the Operations Committee to implement a flexible benefits program at the Research Council.

The Study Group presented the concept of flexibility at a series of information meetings attended by 180 employees, and a questionnaire was distributed at the sessions. A further 375 questionnaires were mailed out.

Of the total number of questionnaires distributed, 262 were returned. Of the number returned, some arrived after the deadline and the consultants, Reed Stenhouse Ltd., were able to analyze only 220. A quick review of the late arrivals indicates responses similar to those tabulated by the consultants. The consultants also found there was no appreciable difference in responses between groups of staff or those who received "handed out" and "mailed out" responses.

Of the 220 questionnaires analyzed, 112 were completed by professional and other staff and 108 by members of AUPE. The employee group is predominantly married (70%-80%), in their mid-30s and between 50% and 60% have dependent children. Less than 40% have a spouse working outside the home.

The Study Group says while it is reasonable to expect expressions of concern and skepticism, the questionnaires did not reflect any negative response to the concept of flexibility.

Employees indicated a high level of satisfaction with the Research Council's current benefits plans, but suggested improvements in retirement savings, vacation and educational leave, and dental insurance. Respondents were quite receptive to flexible benefits (79.5%) and were prepared to exchange vacation benefits (81.6%) and medical/dental benefits (77.3%) for other benefits. This level of acceptance is substantial, the Study Group notes. One respondent's comments best reflects the remarks of staff: "I'm not interested in giving up the value of benefits I receive now, but a program which allows me more satisfying use is very appealing."

Staff also expressed interest in exploring new group insurance plans such as automobile and homeowner/

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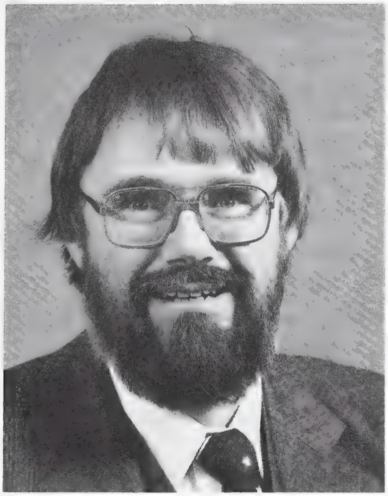


Mark Fenton

Terry Macyk

Appointments announced

Dr. Mark Fenton and Terry Macyk, Terrain Sciences Department, have been appointed Senior Research Officers.

Dr. Fenton is well known locally, nationally and internationally in the Quaternary geology community, particularly for his knowledge and experience in stratigraphy and glaciotectonic terrain. He joined the Geological Survey Department in 1974, moving to Terrain Sciences two years ago where he is manager of land resources research. One of his major projects, coal mine highwall stability, applies an understanding of basic geologic phenomena to problems of practical and economic significance related to coal mining in the plains region. Dr. Fenton holds a Ph.D. in geology from the University of Western Ontario.

Terry Macyk is a recognized expert in the fields of land reclamation research and soil survey, with one of the longest records of those working in land reclamation research in Alberta. He has completed numerous projects in land reclamation for Smoky River Coal Ltd. and since 1979 has had a major involvement in the Plains Hydrology and Reclamation Project. He holds a B.Sc. in Agriculture and an M.Sc. in Soil Science from the University of Alberta and joined the Research Council in 1968. Last year he was appointed manager of the Terrain Sciences Landscape Quality Group.

Technical seminar October 21

Dr. Brian Hitchon, Research Fellow, will be the speaker in the second of this series of seminars October 21 at 11:00 a.m. in the Mill Woods auditorium. He will discuss the Swan Hills waste disposal.

Professional staff are encouraged to attend these monthly seminars, intended to increase awareness and appreciation of our research projects and the importance and relevance of this work to the Alberta economy.

United Way campaign

The United Way supports more than 100 programs within 41 participating agencies in our community. In difficult times, more people turn to these agencies for United Way health and human care service.

The Alberta provincial employees' United Way campaign is now underway and the Research Council's target is $27,000. Campaign chairperson Karen Beliveau, Industrial Development Department, says volunteers from each department will be canvassing staff before the campaign closes October 24. Your support is needed and is an effective way to reach out into your own community. More than 85 per cent of your donation goes directly to programs operating where you live and work.

Research Cou

The third article in a five-pa
the economic development o

Despite the current unsettled and depressed world oil market, most forecasters believe that the world oil price will stabilize in the near future. Consequently, the long term needs for Alberta to develop economic extraction processes for its vast oil sands deposits has not changed.

The Energy Resources Conservation Board forecasts that Alberta's conventional oil supplies will fall by more than 35 per cent during the next 10 years and by 2007 conventional oil productive capacity will drop another 50 per cent.

Even allowing for new discoveries and tertiary recovery projects, the ERCB says the downward trend can only be reversed by development of the province's vast oil sands deposits. There is one commercial in situ oil sands recovery operation, but more than 30 experimental projects are under way in oil sands and heavy oil extraction.

As companies move toward commercialization they are building on years of technical research that began more than 60 years ago at the Alberta Research Council when Dr. Karl Clark undertook the early investigation of bitumen separation. The hot-water extraction process Clark developed became the basis for the surface mining operation being carried on today by Syncrude and Suncor.

The looming energy crisis of the early 1970s and the Canadian goal of security of supply spurred the Alberta government to foster development of new technology for in situ recovery and processing. In 1974 the Alberta Oil Sands Technology and Research Authority (AOSTRA) was established and the following year, the Research Council organized an Oil Sands Research Centre with two major objectives:

- To coordinate Research Council activities which received AOSTRA funding; and
- to serve as the technical arm of AOSTRA by assisting in evaluating proposals, providing consulting and analytical services and monitoring other projects on request.

ncil is world leader in oil sands technology

t series describing the work of the Alberta Research Council and how it supports
f the province.

Today, the Research Council's Oil Sands Research Department employs more than 100 scientists and technicians working on oil sands research and according to department head, Dr. Duke du Plessis, the Research Council has the leading edge on the technology in the world.

Over the past decade, more than 50 patentable technological advances have been made by Research Council scientists and engineers and more than 100 man years of contract work have been conducted for industry in the area of bitumen recovery. Five new in situ recovery processes have been developed which are either being tested or are scheduled for field testing by industry.

The Research Council has formed the world's foremost oil sands geology group, whose knowledge and expertise is widely used by AOSTRA and industry. The Oil Sands Research Department has developed complex and unique computer models and its groups studying geochemistry and the fundamental properties of bitumen are leaders in their fields.

"Each oil sands deposit has different characteristics and you need different types of processes to exploit them," says Dr. du Plessis. "One of our challenges has been to examine and develop the particular process for a given set of circumstances."

Some of that development has been in joint research with AOSTRA and the technology goes to AOSTRA because that organization is charged with the responsibility of transferring the technology to industry.

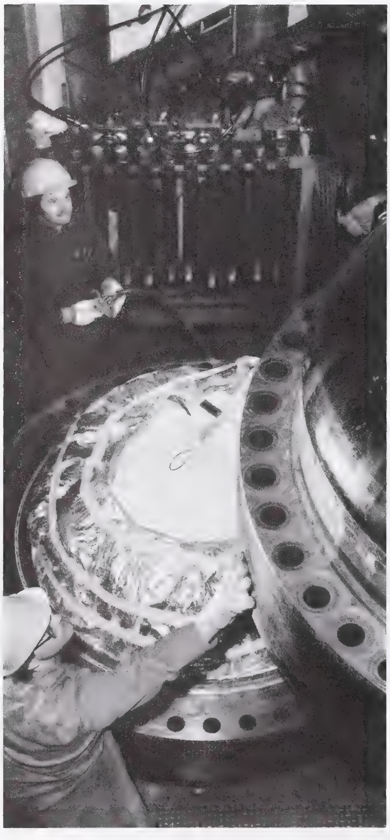
The Research Council also has an industrial contract side whereby facilities and expertise are available directly to industry. Multinational companies that have their own research facilities, but not in Canada, or multinational companies that do have their own Canadian research facilities but don't want to duplicate what is already available, make use of this research expertise and equipment. Small or medium-size Canadian companies which have no research facilities in oil sands also turn to the Research Council.

A good example of the Research Council's work with industry is its 15-year association with Texaco Canada Resources. Recently the Research Council and Texaco signed a new three-year contract to continue field studies at the Texaco's pilot plant at Athabasca.

"The important point is that industry is using our expertise," says Dr. du Plessis.

An encouraging spin off from fundamental in situ studies is a better understanding of how to improve the hot water extraction process for low grade mined oil sands, demonstrating that expertise developed in one area often can have unexpected benefits in another area.

The technical and economic evaluations group of the Research Council has developed a set of sophisticated mathematical models for analyzing energy issues. These models are being used by a number of provincial government departments and agencies, including Energy and Natural Resources, Economic Development, AOSTRA and ERCB.



Putting the lid on large simulator packed with oil sand.

"In trying to develop an analytical framework for evaluating these forecasts, we also have developed at the Research Council a relatively simple model for forecasting world oil prices, using our estimate of the demand and supply responses to changing oil prices and our evaluations of the political and economic motivation of Saudi Arabia," says Dr. du Plessis. "The model is very easy to run and is particularly helpful to the user in gaining an insight on the forces that influence world oil prices."

The Research Council operates an Oil Sands Sample Bank and staffs the newly expanded AOSTRA Library and Information Services. The Oil Sands Sample Bank collects, stores, distributes, analyzes and evaluates various oil sands and bitumen samples and ships samples to petroleum research laboratories around the world. The information service collects and disseminates information related to oil sands, heavy oil and enhanced oil recovery, providing on-line access to computerized data bases.

In his annual report in 1950, then-director of research, Dr. Robert Newton, said of the oil sands research, "a number of details remain to be cleared by further investigation, but it is reassuring to know that if an emergency required Canada to become self-sufficient in oil ... the bituminous sands could be developed quickly. Long range research and experiment have paid off richly in this case."

Dr. du Plessis echoes Dr. Newton's sentiment—"the next most viable energy source for Alberta and Canada after conventional oil is the oil sands and the Research Council has demonstrated its usefulness in leading the way for industry to develop this rich resource."

Benefits

continued from page 5

tenants insurance provided good value can be obtained.

In terms of funding a revised benefits program, most respondents subscribe to the concept of cost sharing (92.1%) and a majority consider a reasonable level of Research Council contribution toward the cost of premiums to be in the range of 50% to 75%. Few employees expect 100% coverage by the employer.

In order to obtain better or more appropriate benefits coverage, a large number of respondents (82.1%) indicated a willingness to increase their own contributions.

The Study Group expects its recommendation for implementing a flexible benefits program to go to the Operations Committee this fall. If approved, details of the program will be worked out and staff will have an opportunity to comment on the design. Meanwhile, staff are encouraged to watch for further details of the survey results from the PSA and AUPE.

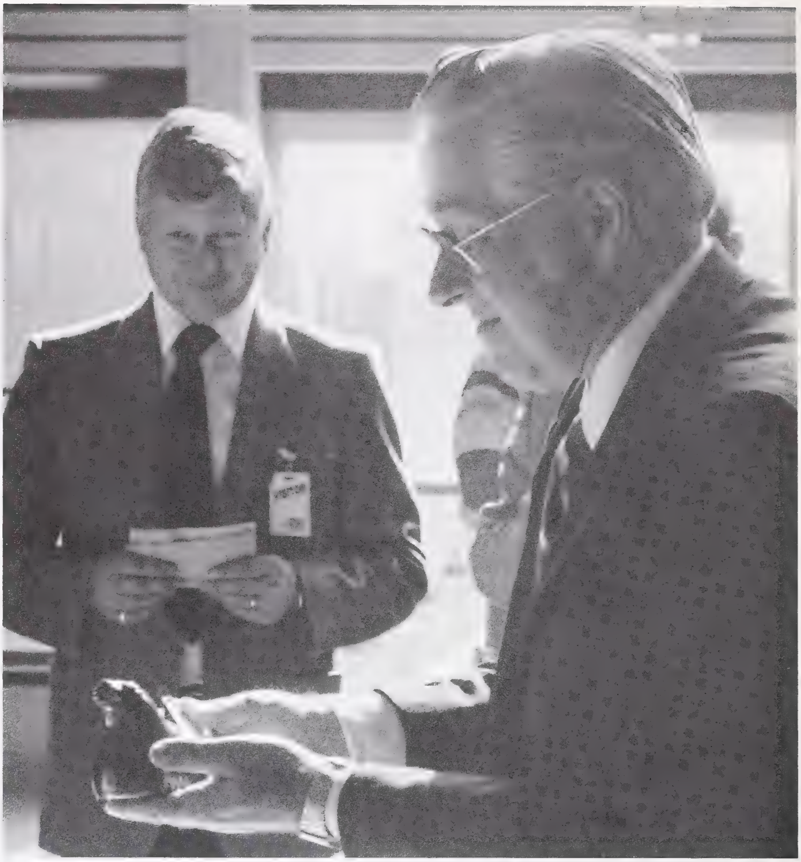
Dr. R. Youngs, Dr. G. Cloutier to be speakers

Dr. Robert L. Youngs, internationally recognized expert in forestry science, will deliver the second in a series of lectures being held in conjunction with the opening of the new building. His talk is scheduled for November 3 at 3 p.m. in the auditorium.

Dr. Youngs, a professor at the Virginia Polytechnic Institute and State University, is a member of the International Academy of Wood Science and a former chief of the United States Forest Products Laboratory, Madison, Wisconsin.

The third lecture on November 13 will be given by Dr. Gilles G. Cloutier, former president of the Research Council and now Rector of the University of Montreal.

It was under Dr. Cloutier's guidance that the Research Council adopted its first Long Range Plan and he was responsible for promoting the necessity for new research quarters and overseeing the initial planning.



Al Roehl admires soapstone carving presented to him on his retirement. Looking on, Richard Anderson, Director of Forest Industry Branch of Alberta Forestry, Lands and Wildlife.

Al Roehl retires after long career

They gathered in the west atrium at Mill Woods, colleagues and friends of many years, to celebrate with Al Roehl on his retirement.

There were speeches recalling events and the part Al has played in Research Council activities in the past 30 years, and there were presentations to acknowledge his dedication and contribution.

Al joined the Research Council in 1957 and his first job was working as a technician for the late Dr. Karl Clark. Later he was involved in the first pilot plant chemical engineering projects undertaken at the Research Council.

Transportation of heavy crude, capsule pipelining, field testing of underground coal gasification, were among the projects he managed. In 1980 he was appointed interim manager of a small group of engineers and chemists whose role was to provide expertise to secondary industry, and he subsequently was named Head of the Materials and Testing Department. Most recently, he had been Administration and Contracts Officer in the newly formed Industrial Technologies Department.

In reflecting on his career, Al said long hours at the office often kept him from spending as much time as he would have liked in volunteer activities, but retirement will give him the opportunity to devote to children's organizations, particularly disadvantaged youth.

Newsline is a monthly publication for the employees of the Alberta Research Council.

Please send all submissions
and direct all questions to
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ALBERTA
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Volume 7, number 10 November 1986

Newsline

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Awareness key to support for science

The juxtaposed headlines said it all: Canadian scientist shares Nobel Prize for chemical studies; Scientific research funds slashed by budget cuts.

The day Professor John Polanyi*, University of Toronto chemist, became Canada's fourth Nobel laureate, the National Research Council announced a $20 million budget cut, eliminating 200 jobs and a wide range of research activities in biological sciences, chemistry, electrical and chemical engineering, physics and aeronautical research programs.

The irony in the timing was not lost on the media and served, if briefly, to focus national attention on the question which concerns the scientific community—awareness of science and what that means in terms of national priorities in developing research talent and opportunities in Canada and the implications for the future if Canadians fail to understand the importance of science in their lives.

In an address given at the Research Council entitled "The Need for Scientific Literacy," Dr. Rosalyn Yalow, distinguished United States physicist and Nobel laureate, asked "what is the laboratory system of Canada that has not encouraged the development of the imaginative scientist that makes the breakthrough?" It is her belief that it isn't just money that makes the difference—"it is the attitude among the people as to the worldliness of science and the freedom to do science that has a very important effect on what the development of science will be."

The problem must be dealt with at two levels, says Dr. Yalow: educate a new generation that is scientifically literate—too many students are opting for law and MBAs—and educate the adult population, including college graduates, too many of whom are

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Nobel laureate Dr. Rosalyn Yalow and Dr. Duncan Currie, Vice-President, Applied Sciences Division

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Formal statement defines mission

To advance the economy of the province by promoting technology development, performing applied research, and providing expert advice, technical information and scientific infrastructure that is responsive to the needs of the private sector and supports activities in the public sector. - Mission Statement.

The Research Council has adopted this formal statement to define the organization's mission and solidify the direction of its current work. Developed by senior management, the mission statement "sharpens our notion of what our business is all about," says Dr. Robert Stewart.

The advantage in having such a statement "is that we can be more consistent in what we say and it offers some guidance to departments."

The mission statement also reflects the changed role of the Research Council from the one spelled out in the Long Range Plan of more than five years ago.

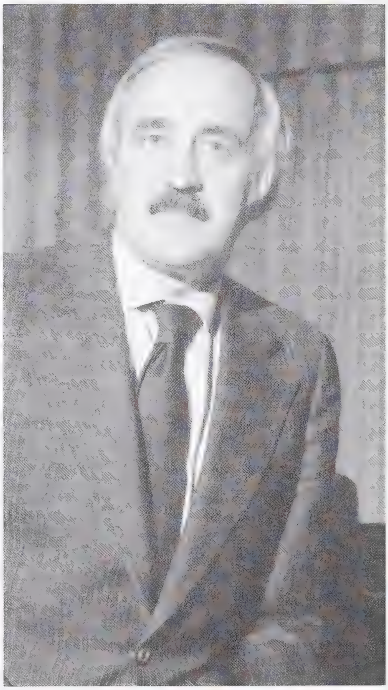
"If you read the Long Range Plan with respect to frontier sciences, it was literally to be that—a group of people working on the frontiers of science, trying to push back the frontiers of knowledge," says Dr. Stewart. "There is not a hint of that in the mission statement. We're busy doing applied research, not fundamental research. Things that are not likely to pay off until far in the future are not our business. We measure ourselves, not by how much we advance the frontiers of science, but by how much impact we have on the economy."

He believes that, in a declining budget cycle, the emphasis will be even more strongly in that direction and in fact, the Research Council might have to resist pressure to go too far along that course.

"We ought to be looking out a few years and not concentrating solely on things that are going to have an impact in a few months—that's mostly the private sector's business."

While expressing some reservations about mission statements in general —"their purpose is to meet other people's needs"—Dr. Stewart sees the Research Council's mission statement "as a statement some people find useful to look back to as a general principle from which further ideas can be developed. But one certainly wants to be careful that it isn't used to prevent one from doing things that are desirable."

"I hope it helps clarify for staff what we are all about," he said and suggested rather than quoting the mission statement in isolation, that it be used with examples of the work being done.



The Research Council welcomes former president, Dr. Gilles Cloutier, November 13, when he will give an address at 3 p.m. in the auditorium. His topic will be "The Impact of Government Research Organizations on the Economy—Experiences in Alberta and Quebec." Dr. Cloutier is now Rector of the University of Montreal.

Awareness

continued from page 1

scientifically illiterate.

"There is a crucial need, not to make all people into scientists, but to make each of them better informed about the interactions of science with living," she says. "Decisions are constantly being made in fields such as radiation, pollution, vaccination, among others, and a vote is meaningless unless citizens understand the issues on which the votes are being taken."

She challenges universities and scientists individually to develop a solid base of support for understanding and appreciation of the role of science in our lives and warns "if we don't speak to our local community groups, churches, radio stations, if we hide our heads in the sand, we can go back to being an agricultural community."

Dr. Yalow's views are shared by Dr. Gordon MacNabb, former president of the Natural Sciences and Engineering Research Council of Canada, now at Queen's University. Dr. MacNabb contends that Canada continues to rely too heavily on a raw resource base when we should be developing our human resource talent.

All the evidence points to a worldwide shortage of research talent that will become extreme in the next decade, Dr. MacNabb told his audience at the Univerity of Alberta's Robert M. Hardy lecture. The public must recognize the urgent need to invest more in the type of training that goes on in our graduate schools as well as the retraining of the labor force itself.

He views the throne speech announcement of the formation of a national advisory board for industrial technology as a step in the right direction which places a portion of the total issue at the most senior level of government "where it belongs" and adds "let's hope the intertwined issues of education, research and research training also get the priority attention and funding we must give them."

Noting that governments tend to follow rather than lead public opinion and that basic long-term research is not a priority of any government, he issued a plea for someone to champion basic research in Canada.

"It will take strong leadership to opt for the future rather than for the present...changes in our national priorities are essential if we are going to ease our economy away from its heavy resource dependency."

But he said we will not see major changes towards that oft-proclaimed "innovative society" until the majority of Canadians can be convinced that our physical resources are finite and diminishing while we have yet to really test the limits of our human talent.

**(In 1984 Dr. Polanyi gave an address, "How discoveries are made and why it matters" which inaugurated the 75th anniversary lectureship series presented by the Research Council to the University of Alberta.)*

New R&D tax guidelines being applied

New guidelines to clarify what constitutes research and development have been issued by Revenue Canada, but just how the new rules will be applied is open to interpretation.

"Every R and D project will have to be examined individually on its own merits," says Bob Moore, Director of Financial Services.

Revenue Canada is expected to begin following the guidelines—officially a 34-page "information circular"—in November when assessing the R and D claims of several hundred Canadian companies this year. Among those companies may be firms which have contract arrangements with the Research Council.

The objective of the new guidelines is to remove the uncertainty that has inhibited technological research and scientific development since the notorious scientific research tax credit (SRTC) program went out of control in 1984, costing the government billions of dollars in questionable or fraudulent claims.

Problems with the SRTC legislation arose because the program's initial guidelines on what constituted real research and development were too vague. The new guidelines are aimed at tightening the definitions, but some accountants and executives have expressed concern that the new rules may go too far.

In a recent report from the Financial Times News Service, Roy Woodbridge, president of the Canadian Advanced Technology Association, was quoted as saying "there are a lot of areas that will require extreme subjectivity in interpretation." Bob Moore calls the guidelines "fairly restrictive," and says they do not encourage R and D.

To qualify for tax purposes "the search for a meaningful advance in the body of scientific or technological knowledge should be present as a guiding element in every eligible project. This requirement is satisfied whether or not the activity was successful...the determination that a hypothesis is incorrect also represents a scientific or technological advancement."

"A straightforward design development is not an eligible activity," says Revenue Canada which also has ruled out all activities with respect to market research or sales promotion, quality control, routine testing, commercial production of new or improved materials, devices or products and routine data collection.

Staff who are involved in contract arrangements with external interests are advised to contact Bob Moore in Financial Services to apprise themselves of what options are available.

Staff notes

Tickets are now on sale for the Research Council's annual Christmas banquet and dance December 5 at the Edmonton Convention Centre. Cocktails will be followed by a four course dinner and an evening of dancing and entertainment including a draw of several attractive door prizes. There will also be three "early bird" draws.

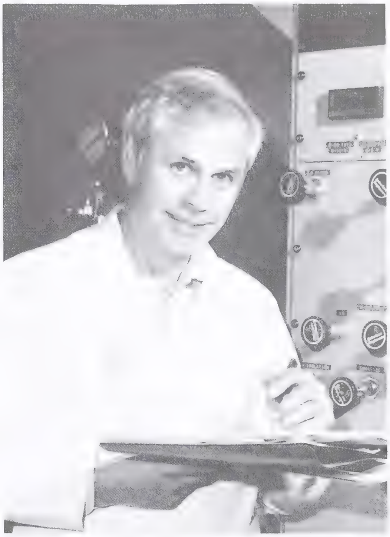
Tickets are $25 per person—check the posters on bulletin boards for the list of ticket sellers. Members of AUPE are eligible for a $10 rebate per ticket and PSA members are eligible for a $5 rebate per ticket. Organizers are planning for another great success and urge everyone to make their party plans early.

* * *

Laurence Andriashek, Terrain Sciences, has been elected president of the Professional Staff Assocation for 1987. Other members of the executive are: Rod Ridley, Oil Sands Research, executive secretary; Birbal Singh, Oil Sands Research, treasurer; Raj Rajan, Oil Sands Research, past president.

Division representatives are: Henry Meng, Applied Sciences; Chuck Harrison, Industrial and Engineering Research; Surindar Singh and Tim Southern, Energy Resources; Bill Korendyk, Natural Resources; John DeHaan, Executive Offices; Eugene Parranto, Finance and Administration.

Committee chairmen are: John Starr, remuneration and benefits review; Walter Leps, professional development, and Jennifer Fuller, membership.



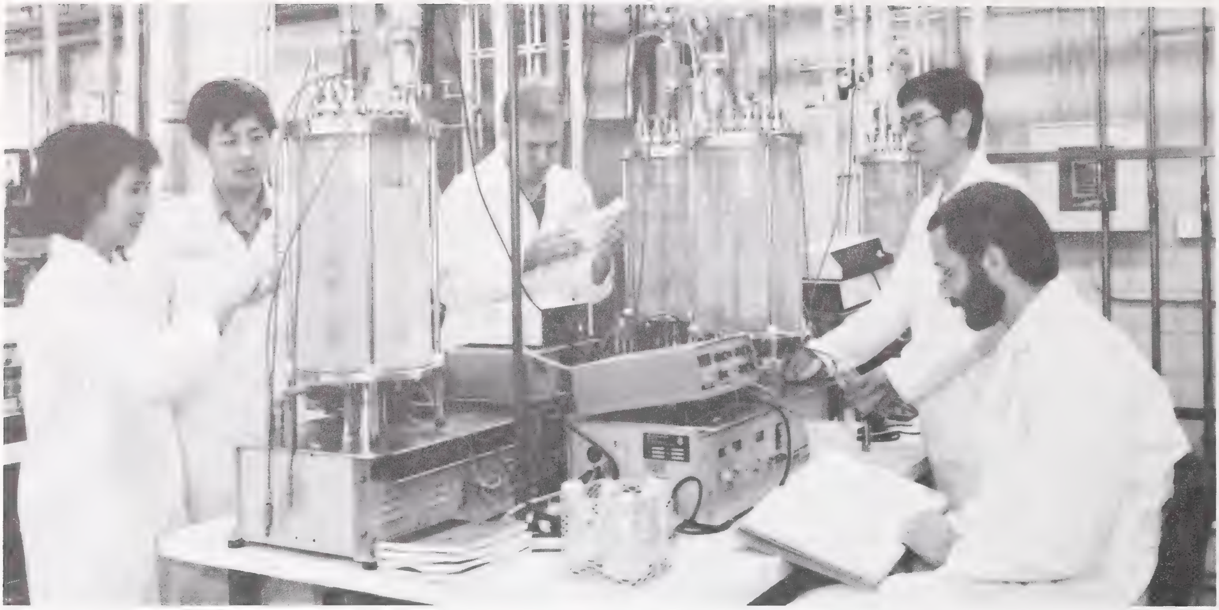
Dr. Gordon Bird

Appointment announced

Dr. Gordon Bird, group leader, Oil Sands Research Department's Hydrothermal Chemistry Group, has been promoted to the position of Senior Research Officer.

Dr. Bird has established an international reputation in experimental geochemistry as well as an outstanding ability as a manager and project leader. He has worked on the fundamentals of mineral phase relations, the mineral reactions that impact on the migration of nuclear waste and the sensitivity of formation minerals to steam-based methods for in situ recovery of bitumen.

Prior to joining the Research Council in 1982, he worked for Atomic Energy of Canada (AECL) and at both organizations he successfully developed and managed hydrothermal laboratories. He holds a Ph.D. from the University of Toronto and from 1971 to 1977 he was a Research Fellow at Victoria University of Wellington, New Zealand. He has published 24 journal and conference papers, 12 internal proprietary reports and serves on the AOSTRA/Bow Valley field pilot technical advisory committee.



Scientists from around the world are coming to the biotechnology pilot plant to learn fermentation techniques. The group above are Qui Laan Qi, Grassland Research Institute, Huhohate, Inner Mongolia; Yajiang Yang, and Xianen Zhang, Biotechnology Research and Development Centre, Wuhan, China; Timothy Steinberg, Basel, Switzerland, recipient of award from the International Association for Exchange of Students for Technical Experience; and Dr. Francis Lambert, Grenoble, France.

Two policies approved

Two new policies, approved by the Operations Committee, address the need for properly equipped video display terminal workstations and specially designed chairs to reduce back strain.

The Research Council endeavors to provide safe and healthy working conditions for all its employees and the policies are the result of assessments and recommendations made by the Occupational Health Unit and a consultant from the Design Group, Public Works, Supply and Services.

It is recognized that VDT workstations require specific design considerations, particularly for those employees who spend more than four hours per day at a VDT. These include computer support furniture, illumination and ergonomic chairs outlined in one policy.

The other policy deals with ergonomic chairs for employees with chronic back problems who have a recommendation from their personal physician.

The Occupational Health Unit will be responsible for assessing requests and recommending the appropriate furniture. Materiel Management will provide funding and items from a specific list of recommended, tested furniture in accordance with standards developed by the provincial government.

Technical seminar

Dr. Ernest Chang, Advanced Technologies Department, will give the technical seminar November 18 at 11 a.m. in the auditorium. His topic is expert systems and their application in Alberta. Staff are urged to attend this seminar series designed to increase awareness and appreciation of our research projects and their relevance to the Alberta economy. Designed to be of particular interest to professional staff, technical staff may also find this series worthwhile.

Employee changes

We welcome to the Research Council: **Aleksandra Bizon**, Junior Research Officer, Oil Sands Research; **Joanne Bonkowski**, Secretary, Editing and Publishing; **Patricia Hunter**, Executive Secretary, Secretariat; **Donald Keith**, Assistant Research Officer, Geological Survey; **Thomas Sheffield**, Research Technologist, Electronics Test Centre; **Jeremiah Sutherland**, Assistant Research Officer, Advanced Technologies; **P.D. Toop**, Senior Secretary, Coal Research; and **Henry Voss**, Junior Research Officer.

We say goodbye to: **Alison Bailes, Heather Campbell, Brenda Coulombe, Alwyn Kaye, Tracy Munro, Erwin Po, Al Roehl, Jerzy Sasiadek, Dawn Schooley,** and **Jean Stein.**

The series on the Research Council's work will resume in the January Newsline.

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Peace on Earth

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Newsline

Newsline is a monthly publication for the employees of the Alberta Research Council.

Please send all submissions and direct all questions to
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Edmonton, Alberta
T6H 5X2

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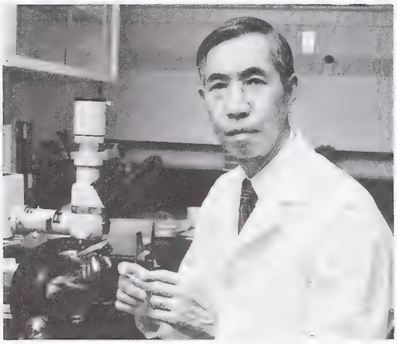
Hats off to these 1986 achievers

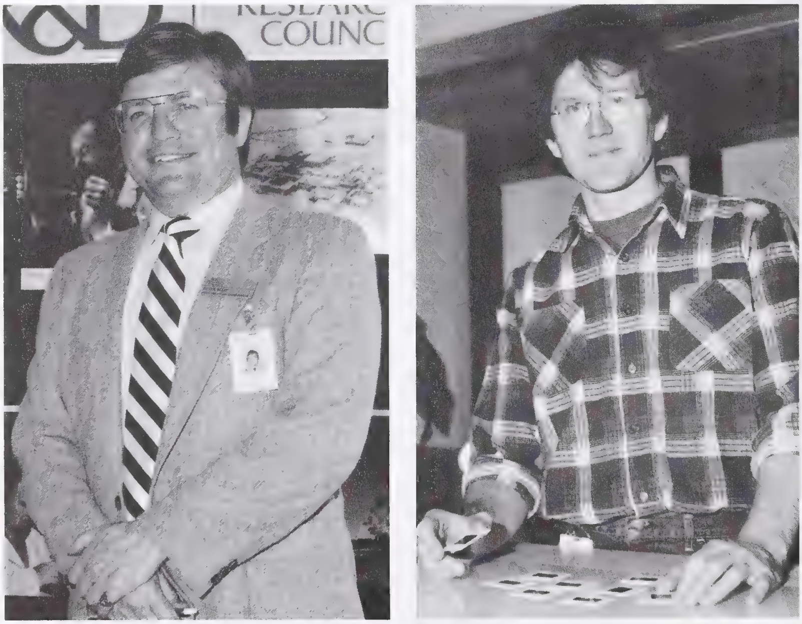
Doug Lillico, Oil Sands Research Department, earned a Masters degree in engineering from the University of Alberta.



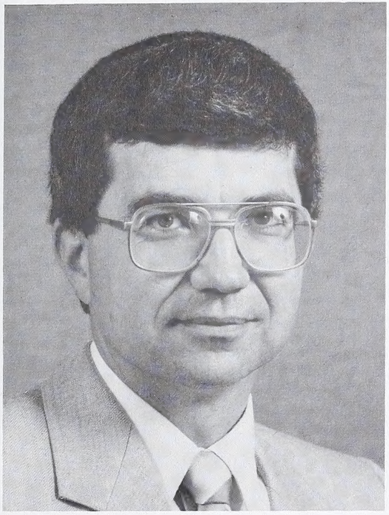
Toshi Kaneda was awarded a foreign research appointment by the Japan Industrial Technology Association and spent five weeks at the Fermentation Research Institute, Tsukuba, Japan.

Rudolph Strobl, Geological Survey Department, received an M.Sc. in geology from the University of Alberta.

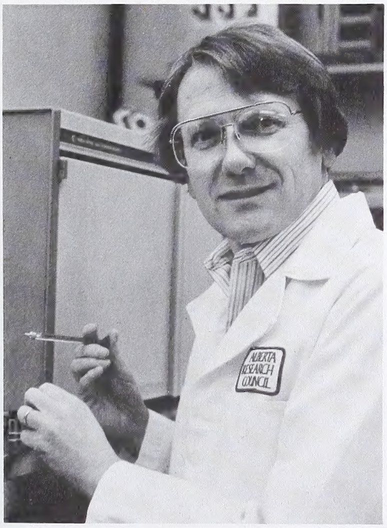
Lars Bach, Forest Products, has received patents on two inventions, the apparatus for manufacturing corrugated wafer board panels and the static bending apparatus for grading wood panels.



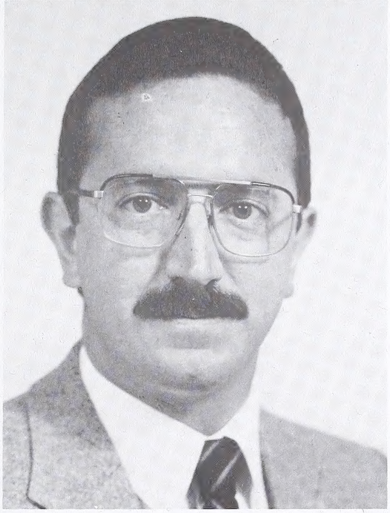
An International Association of Business Communicators award of merit was presented to Peter Roaf, former public relations coordinator, and Steve Tate, Editing and Publishing. The award was given for the Research Council's 1985 annual report entered this year in the Edmonton Chapter IABC capital city competition.



Terry Macyk, Terrain Sciences Department, was elected a director of the Alberta Chapter, Canadian Land Reclamation Association.

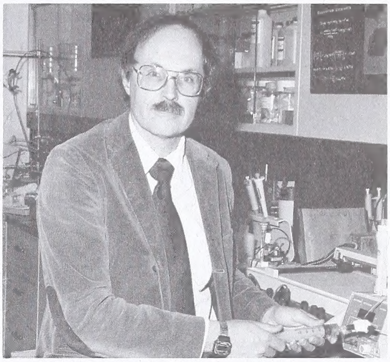


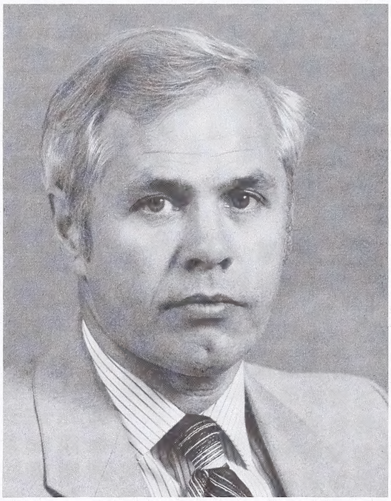
Alan Sanger, Industrial Technologies Department, has been elected vice-chairman of the catalysis division of the Chemical Institute of Canada.



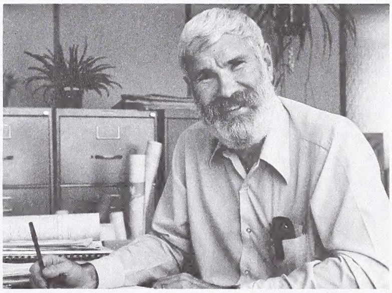
Peter McCabe, Geological Survey Department, was nominated as second vice-chairman of the Geological Society of America, Coal Geology Group, and was keynote speaker at an international symposium on coal and coal-bearing strata, London, England.

Stephen Chiu, Advanced Technologies Department, was granted a Ph.D. in geophysics from the University of Alberta.

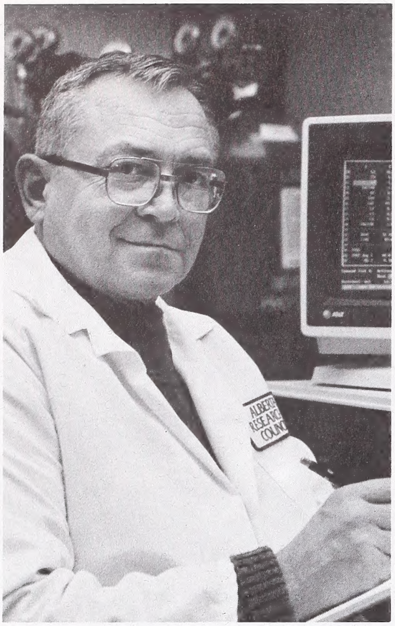




Bill Gunter and Gordon Bird, Oil Sands Research Department, have been appointed adjunct professors in the University of Alberta's Department of Geology.



Don Scafe, Geological Survey Department, was elected secretary of the Clay Minerals Society, at the international organization's annual meeting in Jackson, Mississippi. Don is the first non-U.S. citizen to be elected to the executive since the society's founding in 1963.



Earl Hadfield

Earl Hadfield marks milestone

When research technologist Earl Hadfield reviews his 25 years with the Research Council, his memories span stints with coal research and then the engineering department at the Campus Building, a move to the Parsons complex, and finally his current position in Industrial Technologies at the south Edmonton site.

"There have been so many changes over the years that it's sometimes difficult to remember the names of all the departments," he admits. But he does have clear recollections of joining the Research Council in 1961.

"I'm not sure I was looking for a career with the Research Council—but I was looking for a good job. Research Council staff at that time numbered about 100."

"One of the projects I participated in involved the underground gasification tests at Forestburg. For many of us in coal research, it was our first opportunity for field work and the fact that we were doing something so new made it exciting."

More recently a major highlight was the $1,500 Research Council award he received for providing major support to Dr. C.Y. Pan's membrane permeation research group which developed technology since commercialized in the gas separation industry.

"Today, I'm still working in that field with Dr. Pan. That kind of project doesn't come to an abrupt end. New processes keep coming up all the time and there is still a long way to go."

Asked to pinpoint "the best thing" about working at the Research Council, Earl replies without hesitation: "The people you associate with in an organization like this. I can even say a few of my colleagues have been here longer than I have."

ARC/PSA joint committee forges links

Communication between management and staff in any organization is essential. How effective the interface is often depends on the vehicle adopted by both sides.

At the Research Council, the ARC/PSA joint committee serves as a vital link between the professional staff and management and is seen by both sides as an effective communications tool.

"During the years of its existence the joint committee has played a valuable role in obtaining professional staff input and consultation during the development of Research Council policies dealing with professional employment," says Dr. Ken Babcock, co-chairman. "Because of this involvement, the Research Council has a set of employment policies which meets its needs and those of the professional staff."

The Professional Staff Association (PSA) has existed for more than 20 years, formed by the research staff after original staff association members not designated as professionals came under the provincial civil service union. But the ARC/PSA joint committee didn't emerge until about five years ago.

The committee, composed of three representatives from each side plus the director of Human Resources, deals with matters of concern to the professional staff which they wish to present to management and in turn, takes management feedback to the PSA. The joint committee also conducts surveys and seeks professional staff opinion, particularly on policies initiated by Human Resources. For instance, the new smoking policy and the policy on career development carried recommendations from the ARC/PSA joint committee. Also, policies initiated by the PSA are forwarded to the joint committee for review.

Once the committee has obtained mutual agreement on an issue, the joint committee makes its recommendations to the Operations Committee for approval and implementation.

"The joint committee acts as the voice of the professional staff and is recognized by management so that many potentially contentious issues are aired through the committee," says Dr. Raj Rajan, co-chairman. "It really does serve an important function in giving both sides an opportunity to understand each other's point of view."

Co-chairmen, Dr. Babcock, vice-president of the Natural Resources Division, and Dr. Rajan, represent management and the PSA respectively. In addition to Dr. Rajan, Dr. Alan Sanger and Dr. Bryan Fuhr are PSA representatives. Dr. Bob Humphries and John Starr represent management and Don Peckham is the Human Resources Department representative.

Staff notes

The annual staff meeting for Edmonton area employees will be held December 18 at 9 a.m. in the West Atrium, south Edmonton complex, and for Calgary staff, December 19 at 1:30 p.m. in the Calgary office, Conference Room One.

Dr. Robert Stewart, president, will address both groups.

A long term service award will be presented by Dr. Duncan Currie, vice-president, Applied Sciences, to technologist Earl Hadfield, Industrial Technologies.

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